# ATHLETIC JOURNAL

Vol. XVII, No. 8 April, 1937

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Harry Hillman

Organizing the Pitcher's Thinking
H. S. DeGroat

Making Ground Strokes in Tennis
Eugene Lambert

Form in the Hurdles
Weems O. Baskin, Jr.

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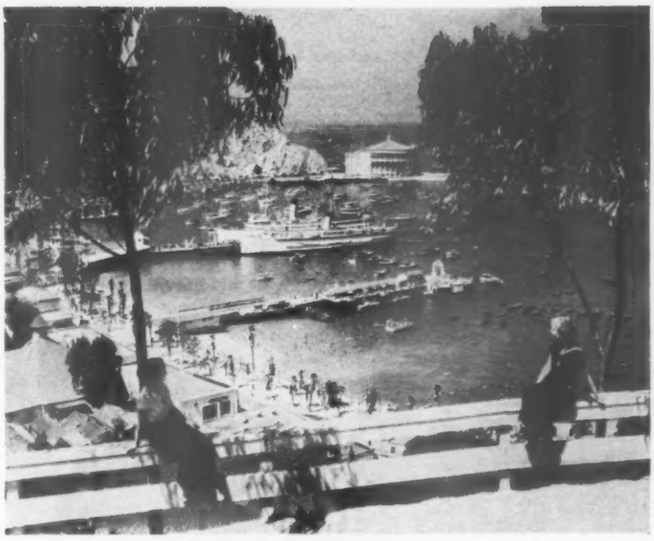

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VOLUME XVII

# The ATHLETIC JOURNAL

NUMBER 8

# CONTENTS
## *for* April, 1937

PAGE

5 The Technique of Relay Running.....Harry Hillman

6 Playing the Outfield.....Otto H. Vogel

7 Organizing the Pitcher's Thinking.....H. S. DeGroat

9 Study of the Qualifications of Baseball Players.....Pat Crawford

10 Teaching Shot Put Form.....Wayne McCorkle

12 Making Ground Strokes in Tennis.....Eugene Lambert

14 Helping the Secondary School Batter.....J. E. Gargan

15 Form in the Hurdles.....Weems O. Baskin, Jr.

18 Editorials

20 More About Advanced Tumbling.....Hartley D. Price

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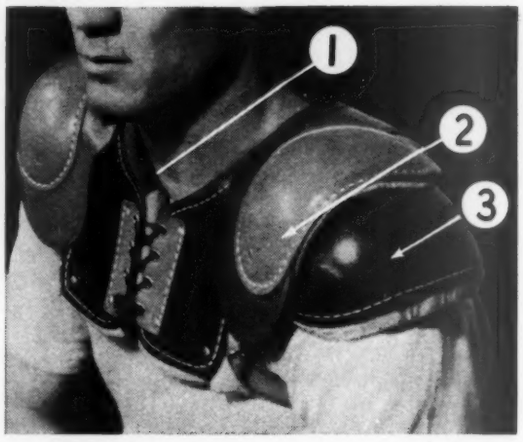


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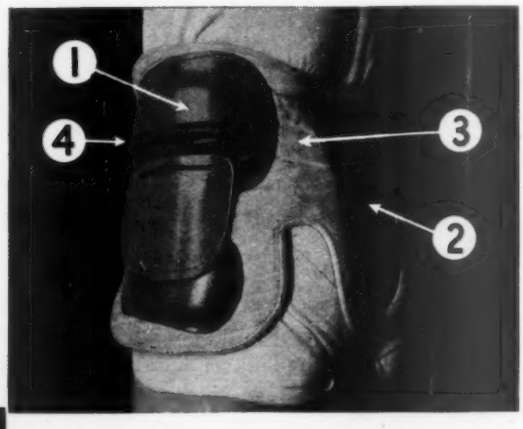


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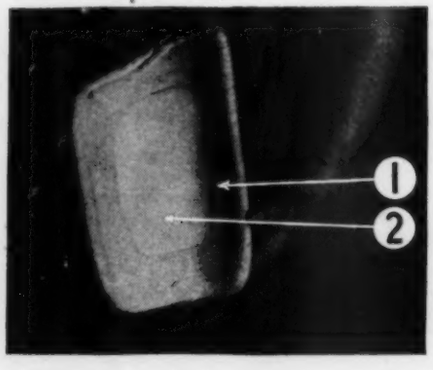


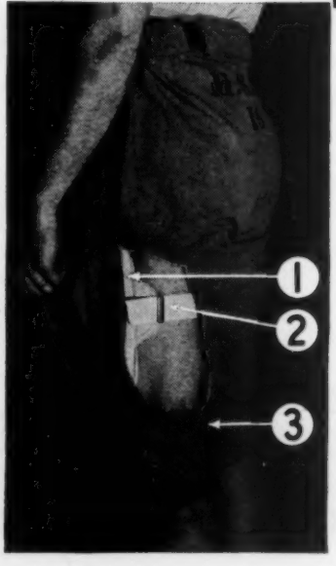


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*Charles Bachman is retained on Wilson's advisory staff*

*FOR the past twenty-eight years, Harry Hillman has coached Dartmouth College track and field teams. In his days of competition, he participated in three Olympiads, winning three Olympic championships at St. Louis in 1904: the 400-meter run in 49.2 seconds, the 200-meter hurdles in 24.4 seconds and the 400-meter hurdles in 53 seconds. He has been associated in a coaching capacity with United States Olympic track teams on three different occasions. In this article, Coach Hillman discusses relay racing, which is sometimes credited with having revived interest in track meets.*

*Gregory Stout (left) and James Helmer, both of the 1937 University of California track team, in the baton exchange. Stout was on the 1936 Collegiate Honor Roll in the 400-meter hurdles.*

# The Technique of Relay Running

*By Harry Hillman*
Dartmouth College

THERE is no more interesting event in track and field sports than a good, evenly matched relay race. Unlike the individual events in track and field, relay running is really a team sport.

In the large track meets held during the indoor season, there are many relay races that attract attention. In the early spring, several large relay carnivals are held in different sections of the country. The Penn Relays, the Drake Relays and the Kansas Relays are probably the most prominent of relay carnivals, attracting schools and colleges by the score. The most popular relay events are the medley sprint and medley distance, the one-mile, two-mile and four-mile races, and the sprint relay.

### *Technique of Relay Racing*

The technique of relay racing is more complicated than it seems to the spectator. The runners must continually practice the pick-ups at a certain speed. The shorter the race, the faster must be the pick-ups. Coaches have varied ideas as to the best method of making the transfer of the baton from one runner to another.

Undoubtedly, the most difficult pick-up is the one in the 440-yard relay, in which each man runs 110 yards. In this race the pick-up usually wins or loses for a team. I have seen four mediocre sprinters defeat four much better men because the passing of the baton by the mediocre runners was almost perfect.

The passing in the 440-yard relay is very hard because the boys are going at full speed. There are several methods used by coaches in the handling of the baton. Some advocate the alternating change; that is, the first runner starts from his mark with the baton in his left hand, passes to the second man's right hand, the second in turn passes to the third man's left hand and the fourth man receives the baton in his right hand. This does away with shifting the baton while running. Other coaches recommend passing with the left hand and receiving with the right. Still other coaches advocate the passing from the right hand to the left, especially in races which are held indoors when some of the pick-ups are on a turn.

In this short race, the runners must do some quick thinking and start at the right time. They are usually going at their maximum speed during the last part of their relays; consequently the pick-ups must be very well timed. The best method, I believe, of passing the baton in this dash relay is for the relief runner to start about eight yards ahead of the runner coming in. If the relief runner starts too soon, the incoming runner will never catch him, and, if he starts too late, valuable distance will be lost. If the pick-up is on a turn, about six yards is sufficient distance to allow. Of course, the distance depends somewhat on the relative speeds of the runners making the baton exchange.

### *Types of Passes*

I have experimented with the various types of pick-ups and have found that the one which is best for the shorter race is as follows: It is somewhat of a gamble but, if done correctly, it is a time saver. The first runner starts from a crouch with the baton in his left hand. The second runner, on his mark in a crouched position, looks back and, when the incoming runner is about eight yards from the second runner, the latter starts off his mark like a flash, using his arms as he would in a regular sprint, taking four arm swings, left, right, left, right. By that time the incoming runner is ready to pass. The second runner then puts his right hand on his right hip, palm facing inward and with the fingers forming a cup. The first runner places the baton in the right hand of the second runner. This necessitates pass-

ing the baton, while running, from the right hand to the left. Although this method is somewhat complicated, if the boys do some thinking and use judgment it works out satisfactorily.

In the one-mile race, in which each man runs 440 yards I have always had our boys pass with their left hand and receive with their right. In this longer race, the speed at the finish of course diminishes, and the relief runner must use his judgment as to how fast his team mate is going to finish. If the relief man finds the runner tiring toward the end, he must play safe and practically wait for the latter to come in. If, however, the relief runner believes his team mate is finishing strong, he can start when the runner gets about three yards away. The runner who is to receive the baton stands facing towards the front; his right arm is extended backward with the palm up and the thumb toward the body and down. The man taking the baton keeps his arm in this position until he has received the baton; then immediately he shifts the baton to his left hand so that he will have the baton in this hand for the next relief.

In the 440-yard and the one-mile relays, the pick-ups count a great deal in the winning or losing, and a team never can afford not to practice this phase of the

*(Continued on page 34)*

# Playing the Outfield

*By Otto H. Vogel*
**State University of Iowa**

THE ideal type of outfielder is one who can throw, who has speed afoot and who can hit. Size is not important, but, as has often been said, a good big man is better than a good small man.

The first fundamental in fielding a fly ball is that the player get under it as quickly as possible so that, if the ball is misjudged, the fielder can change his position and still catch the ball.

On all line hit balls, the left and right fielders should be aware of the fact that the ball will always curve toward the foul line, if hit along either line, and they should play for this curve.

An outfielder should never give up on a ball if it is hit in front of him and he has the least chance of getting it. There are times when it may be necessary to dive for the ball, depending of course on the situation in the game at the time.

When the ball is hit over the outfielder's head, he should turn and run back as fast as possible and then turn to face the ball. He should not run sideways or backwards. In fielding the ball, he should never reach for it, or put his hands out until he is under the ball. He can run faster with his hands at his sides in regular running position, instead of extended.

In catching the ball, the hands should be held in one of two positions: either with the little fingers together, palms out, or with the thumbs together, palms out. The first position is usually used on a high fly, the latter on a line drive.

### *Team Play*

In handling ground balls, when there is no one on base, the fielder should play the ball safely. When there is a man on second, however, the outfielder must play the ball fast by coming in fast; he must take a chance in order to make a play at home. On a ball hit to right field with a man on first base, the right fielder must play the ball fast to hold the man on second.

When two outfielders have an equal chance to play a fly ball, the one who calls first has the right of way. If, however, neither calls, it should be understood that the center fielder has the right of way. The outfielders should always back up each other on every play, and also back up the plays made by the infielders.

*THE author of this article is a thorough student of outfield play. While at the University of Illinois, Otto H. Vogel was one of the leading collegiate outfielders of the country, being named to the honorary American collegiate baseball team in 1922. For a number of years, he has been Head Baseball Coach at the University of Iowa.*

When the outfielders have a throw to make to home, or to any of the bases, the ball should be hopped in except when the throw to the base is short. When they throw home, the ball should be thrown to land about forty feet from the plate. The same procedure should be used on all but short throws to the bases. The reasons for hopping the ball in are that it gains speed on the hop, and the danger of an overthrow is greatly lessened. At the same time, the throw to home will be such that the pitcher can cut off the throw from the outfield and make a play to a base, usually second.

The outfielder must keep in mind always to throw to the base ahead of the runner. He should not throw home when a runner is on second base and the ball comes to him on a base hit, unless he has a chance to get the runner. The play should go to second base, thus holding the hitter on first base, except in the ninth inning when the winning run is on second base; then the fielder should throw home. He should never make useless throws.

On fly balls with a man on third, the play naturally is home. However, if there is a man on first and third and a long fly is hit, the play is at second. The score must always be considered. When the team of the outfielder is runs ahead he should always play the runner who will go into scoring position, not the man trying to score.

On long hits to the outfield, it is sometimes a good idea to have the outfielders swing over for relays. An example: on a long hit to right center, the right fielder runs down the ball, while the center fielder swings over and takes the relay, placing himself in such position that he can make the relay to the correct base. Outfielders should always get the ball into the infield as quickly as possible.

### *Outfield Strategy*

A good outfielder keeps numerous things in mind. He plays his position with respect to the wind, moving in when the wind blows in and moving deep when the wind blows out. The cross wind should also be played.

He shifts with his infield players. When they move in, he also moves in. When they move out, he plays deeper.

The outfielder should know his pitcher. A fast ball pitcher will cause the hitters to swing late. If the outfielder knows each pitch as he should, he will have the jump when the ball is hit into his field.

The good outfielder always plays according to the type of hitter at bat. Left-handed hitters will usually not have power into left field. Consequently, the left fielder should move in closer, the right fielder deeper. The good outfielder also plays according to the power of the hitter. A big man will generally drive a ball farther than a small man. A man with lots of wrist snap will drive a ball father than one without it. Whenever the pitcher is in a hole, the outfielder should play deeper than usual.

Generally, the outfielders are placed so that the best and fastest player is in center field. If the coach has a left-handed fielder, he should usually play him in right field. This player must, however, be a good thrower to keep runners from going from first to third base on hits into right field.

Illustration 1—The pitcher is shown in this picture as he sizes up the batter and takes signals from the catcher before he steps on the mound.

*NOW in his twenty-third year of coaching, H. S. DeGroat has been at Springfield College since 1927. He graduated from Springfield in 1914, when it was known as the International Y. M. C. A. College. In DeGroat's first ten seasons of coaching at his alma mater, the Springfield College baseball team won 94 regular season games while losing 69. Previous to 1927, DeGroat coached at Attleboro, Massachusetts, and Nyack-on-Hudson and Bronxville, New York. In this article, he gives helpful hints for young pitchers in sizing up the batters who face them.*

Illustration 2—The pitcher takes this position with a runner on first. His hands are at his belt. His left foot points toward the batter.

# Organizing the Pitcher's Thinking

*By H. S. DeGroat*
Springfield College

BASEBALL coaches know that a large part of the success of the team depends upon the pitching staff. A first rate pitcher can make a mediocre team look strong, while a potentially powerful team can be found dropping game after game if the pitching staff is weak or inexperienced. It is the policy of some coaches to try to make "pals" of their pitchers and spend many extra hours with them.

Just what do these coaches do with their pitchers? What do they talk to them about? What can a young coach do with his staff? What can he do to bring out the best in his pitchers if he does not have time to "pal" with them and spend extra hours with them? Where can he find out what to talk to them about to guide their thoughts and ideas, especially if he has not been a pitcher himself and so has missed that extra and very helpful training?

### *Sizing up Batters*

To help this type of coach and, also, prospective pitchers, the following effort has been made to direct the thoughts of the pitchers, giving them a definiteness in the approach to their problems of sizing up the batters by listing things to remember, by telling where to aim their curves and by suggesting other factors necessary for successful pitching. There can be no doubt in the mind of anyone who coaches that it is better to have some definite plan of attack or of looking at a problem than to have an indefinite or haphazard method. If the prospective pitcher is simply told to try to "put 'em where they can't hit 'em" and a few other general instructions, he may develop, but at a slower pace than the lad who is given more specific instructions.

This is a direct attempt to organize the thinking of the pitcher. There are four things for the pitcher to bear in mind when he sizes up a new batter.

First: How does the batter hold his bat? Does he use a long, choke or spread grip? Second: Where does the batter stand in the batter's box? Is he close to the plate? In the rear of the box? In the middle of the box? Third: How does the batter step as he swings? Is his step toward the plate, away from the plate or parallel to the edge of it? Fourth: Has the batter any faults?

### *Questions and Answers*

Now, what should the pitcher throw? He must try to do one of three things. He must try to put the ball where the batter cannot hit it; or on the bat handle where the batter cannot place too much wood on the ball; or where the batter will be likely to hit for an easy put-out. These last two possibilities are somewhat alike, but there is a difference because in the final instance the pitcher may throw a high ball to a batter who uppercuts and who is likely to hit a fly; or the pitcher may throw a high ball to a batter who is expected to bunt, with the result that the latter may pop a foul or a fly that will mean an easy put-out. We find the following questions and answers useful to present to the prospective twirler.

*1—How does the hitter hold his bat? Long grip? Choke grip? Spread grip?*

For long grip and spread grip, keep the ball near the batter's hands—on the bat handle—or place or curve it away from the end of the bat. A ball low and outside is hard to reach with these grips. For choke grip, place or curve the ball out of reach, or pitch a high inside ball. This grip cramps the arm swing.

*2—Where does the hitter stand in the batter's box?*

Determine what the first pitch should be by how the hitter holds his bat and where he stands. Then watch for the direction of his step. Study the accompanying diagram of the right hand batter's box and make a mental picture of it so that, as a new batter steps into the box, you see two things right away. One is the batter standing in the box, holding his bat short or long; the other is the exact part of the box in which he is standing. Now, if you can remember the suggestions listed, you may get along fairly well, but you will progress much faster if you analyze these suggestions. If you do, you will find that they follow the ideas suggested earlier in this article. The high inside ball is hard to hit. The low outside ball is hard to

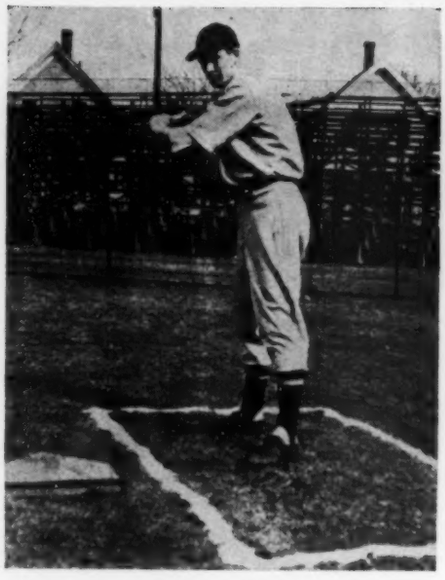

Illustration 3

Illustration 6

Illustration 7

Illustration 4

Illustration 5

reach. The curve placed on the handle, and the outside ball, thrown if the bat does not cover the whole plate, both fall into the set plan of placing pitches where they cannot be hit or, if hit, are not hard hit.

*3—How does the batter step? In? Straight forward? Away?*

Note the direction of this step and also the grip on the bat. Now keep the ball on the bat handle or out of the batter's reach.

*4—Has the batter any faults? Does he*

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**Illustration 3—This batter is using a long grip. He is in the mid rear position in the box. The pitcher should throw a low outside ball to this batter and watch for his step.**

**Illustration 4—The batter shown here also uses a long grip. He is in the rear outside corner of the box and must step in as he hits. He is likely to hit inside balls to right field and outside balls to left field.**

**Illustration 5—A choke grip is being used by this batter. His feet are close together. He may uppercut.**

**Illustration 6—The stance of this batter is faulty; his forward shoulder is too high. He is using a choke grip and has taken a mid inside position.**

**Illustration 7—A spread grip is being used by this batter, who has taken a front inside position in the box. This is an unusual position. The pitcher should, perhaps, aim a curve at this batter.**

**Illustration 8—This picture shows two batting faults. The player has taken too long a stride and has turned his head.**

**Illustration 9—This batter, who is using a choke grip, has his feet too close together. He is likely to take too long a stride or have his weight on the rear foot when he swings. The pitcher should throw high to this batter.**

**Illustration 10—This batter's forward shoulder is too high. The pitcher should throw high to this man.**

**Illustration 11—This picture illustrates a fault—lunging. The pitcher should throw high inside or low outside to this batter.**

**Illustration 12—This picture illustrates another fault—"cow-tailing." The pitcher should use a change of pace on this batter, keeping the ball low, or fast, high and inside.**

Illustration 8

Illustration 9

Illustration 10

Illustration 11

Illustration 12

*step away? Does he step "in the bucket"? Does he put his foot " in the hole"?*

Pitch a fast or curve ball over the outside edge.

*5—Does the batter take too long a stride, generally cutting under the ball?*

Expect flies or pop-ups on a high pitch. Slow or low balls are good medicine.

*6—Does the batter keep his weight on his rear foot? (This may be caused by his feet being too close together before the swing. It may cause a long stride or high front shoulder.)*

Same as the answer to 5 above.

*7—Does the batter plunge, raising his front knee too high when stepping?*

Same as the answer to 5 above.

*8—Does the batter do what is known as "cow-tailing"—swing his front foot back and across the other foot before hitting?*

Feed slow and low balls. Use a change of pace.

*9—Does the batter have a high front shoulder?*

Feed high balls. The batter will uppercut the ball.

*(Continued on page 30)*

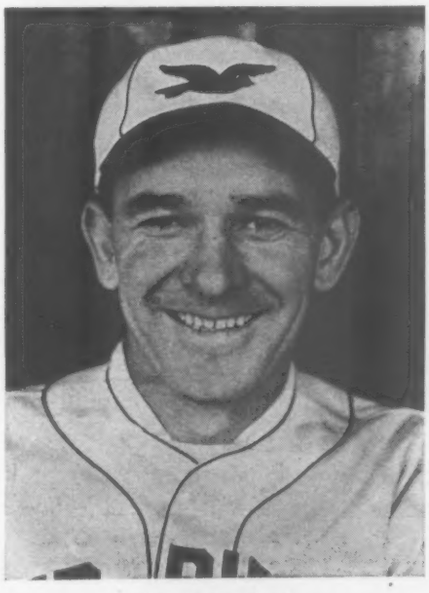
# Study of the Qualifications of Baseball Players

*By Pat Crawford*

NUMEROUS and varied are the questions asked persons of baseball experience. These questions usually fall into five general classes; namely, those pertaining to rules, strategy, technique, individual players and the relative importance of the qualifications for each position, as well as the relative importance of the positions themselves. It is the fifth and last of these classes of questions that prompted the writer to quiz sixteen so-called experts in the field of major league baseball. Among this number are twelve players, one player-manager, one coach, one umpire and one newspaper writer on baseball.

The purpose of the study was to ascertain the relative importance of, first, the nine positions on the field; second, the qualifications of a pitcher; third, the general qualifications of a player; fourth, the qualifications of a manager; fifth, the qualifications of a batsman; and, sixth, the qualifications of a fielder.

The lists of qualifications were secured from a number of informal discussions in clubhouses. After recording the qualifications mentioned during the course of the discussions, it was necessary to telescope them into lists suitable for this study.



*Pat Crawford*

Perhaps there are other qualifications, but these lists cover those mentioned in the discussions. There was no attempt at an exhaustive search for qualifications.

### *Securing the Data*

The men questioned were interviewed individually and their opinions were not divulged to succeeding subjects. Each man interviewed was asked to give his opinions from the viewpoint of a major league manager. However, several questions were asked during the course of the interviews the answers to which probably influenced opinions of those interviewed.

A study of the tables reveals a wide variance of opinion among the experts. The fact that the instructions were oral probably accounts for the wide range of opinions in some cases; that is, the ratings of the importance of "Healthy eyes" in batting, listed in Table 5, range from one to ten. Some of the subjects probably theorized that a player to play at all must have "healthy eyes"; therefore, that factor should be given first rating. Others probably theorized that a player of major

league caliber, as a rule, would have no difficulty from that source; therefore that qualification should not be considered important.

The sixteen subjects were selected because of their interest in the study, and also because they were considered representative experts in the field of baseball. The data are submitted with the hope that they may throw some light on questions regarding the rating of the various positions and the importance of the qualifications for these positions. In each table, the lowest score represents the highest rating.

Although it would not be expedient for a coach or player to weigh these opinions very heavily, nevertheless from the opinions of these few experts he might gain a general idea of the importance of certain qualifications. He might then emphasize some of the activities which he has neglected and decrease the time given to others. For example, he will note that the "Ability to pick good balls" is given high-

*(Continued on page 26)*

*SINCE graduating from Davidson College, Pat Crawford has coached high school and college baseball, done graduate work at Springfield College and at Ohio State University, and played eleven years of professional baseball. He was a member of the championship St. Louis Cardinal baseball team of 1934. Although he is no longer on the active list, he has retained his interest in the game and is engaged in field work for the Columbus Red Birds of the American Association.*

# Teaching Shot Put Form

*By Wayne McCorkle*
**Technical High School, Oakland, California**

*THE shot put form described in this article is characterized by the author as "efficient, exceptionally simple and easy to learn." Wayne McCorkle is now in his third year of coaching at Technical High School, Oakland, California. Under McCorkle's teaching, Herbert Michael, outstanding Technical High athlete, increased his distance in the 12-pound shot put from 44 feet 1 inch in 1935 to 55 feet 11¾ inches in 1936. The illustrations that accompany this article are of Michael, who, now in his first year at the University of California, has thrown the 16-pound shot 48 feet 3 inches.*

WHEN an athlete attains record-breaking performance, reporters, coaches and fans start poking around, trying to discover the secret of his success. Most of their efforts are as unscientific as are those of a cat trying to escape from a puzzle box. The best way in which to make a correct analysis, it seems, would be, first, to take an inventory of the tools nature gave the individual with which to work, and then to make a detailed study of the daily or routine program of training, being especially watchful for any idiosyncrasies that are habitual. With that thought in mind, the writer offers the following comments as an analysis of the efforts of a worthy student who may or may not be earmarked for future greatness.

In June, 1936, when Herbert Michael graduated from Technical High School, Oakland, California, his age was eighteen years and two months. He was 5 feet 11½ inches tall and weighed 184 pounds. He has big bones and large hands and feet.

He began playing with the 12-pound shot when he was in the low tenth grade. His best put that year was 40 feet 4½ inches. At the beginning of his high eleventh grade (January, 1935) I was assigned to teach at Technical High and know only indirectly about his work prior to this time. He won the shot put in the Novice Meet held in March, 1935, with a put of 44 feet 1 inch. His best put in 1935 was 51 feet 7½ inches. He did better than fifty feet only three or four times that year either in practice or competition. In 1936, his best put made in competition was 55 feet 11¾ inches. His best practice put was 60 feet 2¾ inches.

### *First Phase of Practice*

In January, 1935, Michael adopted the technique and work schedule described below. He worked with the shot at least one hour each day, five days each week. Much of this practice was done in his backyard after covering a large paper route and doing homework.

**Illustration 1—Herbert Michael in preliminary shot put practice: the extending of the arm upward.**

A ring was laid out on the football field about eighteen feet in front of and facing the goal posts. As Michael stood in the back of this ring, facing the goal posts, the shot in his right hand rested on the tips of his four fingers and thumb. He had previously developed the habit of resting the shot on the ball of his hand with only three fingers behind it; his hand nestling in the junction of his neck and shoulder. At first it was necessary to tape all four of his fingers lightly together in order to keep the little finger with the others behind the shot; later a rubber band was substituted for the tape. After about four weeks of practice, correct hand position became habitual. The wrist was flexed backward as far as it could possibly be forced. The palm of the hand was kept up, with the heel of the hand exactly in front of the shot. The first movement was to lift the hand upward as high as possible (Illustration 1) and then lower it until it reached a comfortable, easy position, the shot being then level with the nape of the neck. (See Illustration 2.) He next stepped to the center of the ring with the right foot (Illustration 3), then with the left to the toeboard and pushed the shot over the crossbar of the goal posts. (See Illustration 4.)

The points emphasized in this practice were as follows:

1. The shot was held on the first phalange of the thumb and little finger and the first and second phalange joints of the other three fingers. (See Illustration 1.)

2. The wrist remained flexed until the arm was fully extended, when the shot was pushed over the crossbar. (See Illustrations 1, 2, 3, 4, 5 and 6.)

3. Just as the arm became fully extended, the hand was vigorously snapped or flipped forward until the palm of the hand was down.

4. Throughout the movement, the shot

Illustration 2—Preliminary practice: the lowering of the hand to an easy, comfortable position.

Illustration 3—Preliminary practice: the step forward with the right foot.

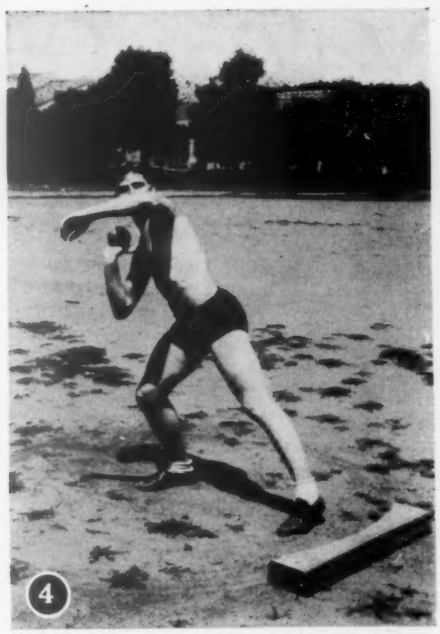


Illustration 4—Preliminary practice: the step with the left foot, which is followed by the push.

remained in a plane passed through the diameter of the ring, perpendicular to the center of the toeboard; the flight of the shot followed this plane over the crossbar. In order to start with the shot in the plane mentioned here, it was necessary for the shot putter to stand with the right foot about four or six inches to the left of this plane.

5. On the forward step, the ball of the right foot was placed in this plane and the ball of the left foot came in contact with the ground about twelve inches to the right of it. (See Illustrations 3 and 4.)

6. By the time the left foot contacted the ground, a very accentuated crouch had been assumed. (See Illustration 4.)

7. The left hand was swung upward and out as the left foot passed the center of the ring on its step forward.

8. The head was turned to the extreme left, and the chin was lifted high in order to permit the shot to follow the plane as the shot was pushed from right to left across the body. (See Illustration 4.)

9. The lift of the push caused the body to follow the shot up and out, even to the extent of forcing the right foot to step over the toeboard. If the right foot was moved, it landed in the plane mentioned above, pointing in the opposite direction.

During the first two weeks of practice, this work was done in a rather slow cadence. As the technique was mastered, the cadence was increased. A day's work consisted of from fifty to one hundred puts, followed by jogging from one to three miles for leg strength.

### *Second Phase of Practice*

The next phase of the work consisted of learning to hop across the ring and to co-ordinate the hop with the technique previously mastered. The stance was now changed so that the facing was perpendicular to the above mentioned plane.

1. The left arm was bent at the elbow and held about shoulder high, with the weight of the body carried entirely upon

*(Continued on page 36)*

Illustration 5—The first stage of the put: the left foot is kicked forward.

Illustration 6—Following the shot up and out.

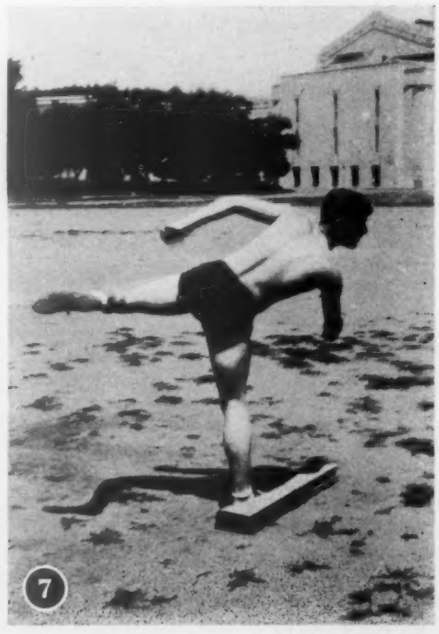


Illustration 7—The end of the put. Note the excellent balance.

# Making Ground Strokes in Tennis

*By Eugene Lambert*
Kenyon College

*MANY articles on tennis are couched in such terms that they are of little value to the player of limited experience. In this article, Eugene Lambert has approached the discussion of ground strokes from the standpoint of the average high school or college player and has given specific information on how to improve these fundamentals. This statement is not intended to imply that experienced players and coaches will not benefit by a reading of Coach Lambert's suggestions; many of them will. An outstanding tennis player as an undergraduate at the University of Arkansas, Eugene Lambert has since coached young players of national distinction. Among these are Don McNeill, ranked third among the National Juniors of 1936 and Morey Lewis, sixth in the same group. Lambert coaches football and basketball at Kenyon College as well as tennis.*

PRACTICALLY all tennis books give a rather accurate description of the proper technique of hitting the ball on the first bounce off the ground. The whole story is really quite simple and can be expressed in a few words. We are told that the player should make the stroke, forehand or backhand, with feet comfortably apart and sideways to the net, with a grip that feels natural, with a full, free swing and with the racket for the most part parallel to the ground. We are told also that the weight of the player should be shifted from the rear to the front foot at the impact of the ball and that the follow-through of body and racket is very important, as is also the keeping of the eyes on the ball until it is struck.

### *Importance of Starting Right*

This advice does not seem at all mysterious, but it is a large order for the vast majority of players to follow. Although there are many elaborations on these for the most part accepted essentials, this article is intended as another discussion of the points involved.

Looking through the tennis literature of the last thirty years, we may see that there are many ways to play the game successfully. The top-notch players have exhibited a varied assortment of grips and strokes. Some have favored top spin mostly and others have used under spin to good advantage. Most of the expert Continental players have shied away from spin and have made most of their ground strokes flat, emphasizing pace before spin.

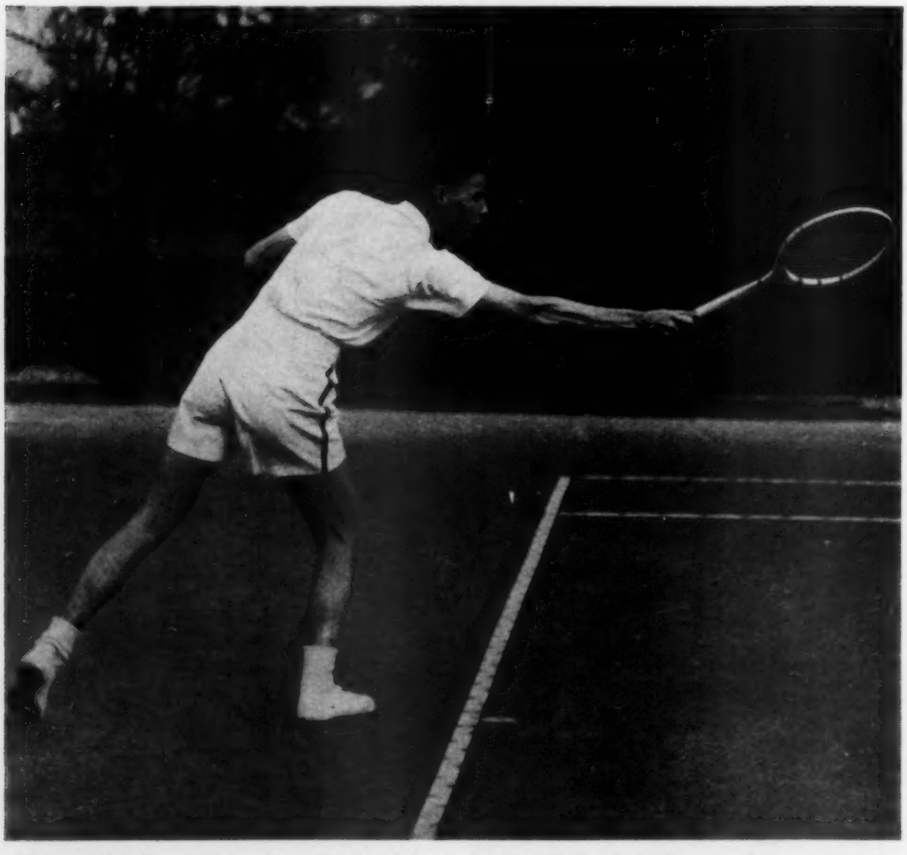
Not a few tennis players have achieved success although violating most of the orthodox fundamentals of stroke technique. According to the tennis coaches, achievement in these cases was possible because of great natural ability and in spite of the handicap of poor form. The right way in tennis is probably as much a moot question as is which football or basketball system is the best. "Things are not what they seem," is a statement that may be applied to the tennis stroke which looks very awkward but which gets results and feels fine to the user. A chap in Newark, New Jersey, pulls his backhand shots with his hand completely in front of the racket handle, but he gets results and has won in the last ten years in Metropolitan New York more tournaments than any other man.

Despite the above admissions, it is an accepted fact that, in the early stages of a player's development, certain fundamental mechanical principles should be adhered to, with individual differences grafted on to these essential patterns.

### *Correct Strokes*

Quite a few very good players have just failed in reaching the top because of uncorrected early weaknesses which became too deep seated to change when proper methods were demonstrated. It is interesting to speculate on what would have been the career of Wallace Johnson if in his early years he had learned a driving instead of a chopping game; or of Frank Shields, had his cramped forehand been corrected at an early age.

Some authorities describe the forehand as the most important fundamental of the game. They point out that without backhand or volley it is possible to play tennis of a restricted and crippled sort; without a forehand it is impossible to play the game at all. Others contend that the backhand is as much an integral part of a player's game as is the forehand. It is probably true that most players have used the forehand as the attacking weapon, but there have been many individuals whose backhand was just as good as or better than their forehand. Better coaching and wider tournament experience for young players have tended to cause equal



*Don McNeill, third ranking National Junior and a Kenyon College sophomore, making a backhand drive with a top spin. His footwork and follow-through are excellent, indicating a powerful shot. This stroke was his most reliable point winner in his tournament play of last summer. In singles, McNeill last summer won the Eastern Junior, Western Junior and other lesser tournaments. He won the National Indoor Junior Championship during the past winter.*

development of both strokes. Regardless of which is the more important, neither can be much below the other if an individual is to hold his own in fast play.

### *Holding the Racket*

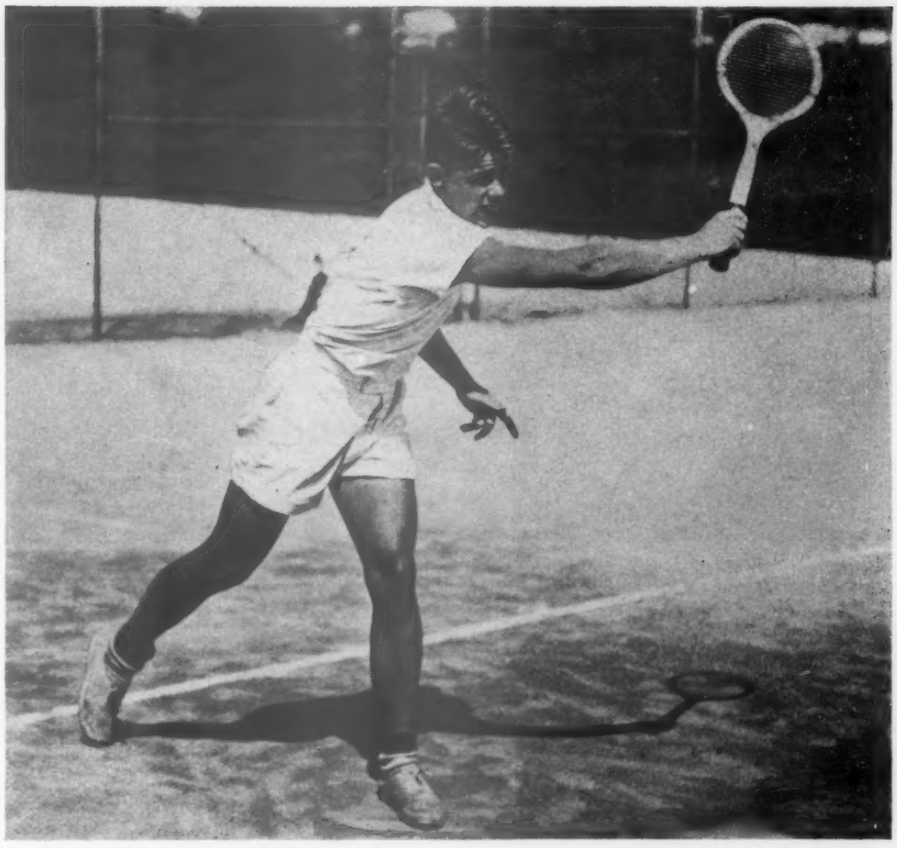
In making ground strokes, players will find that the grip is important, but usually no great difficulty is experienced by the average person on this point. It is my observation that the way the hand is placed on the racket handle is of much less importance than the angle that the racket makes with the forearm. In rare cases the racket head is held too high, and very frequently it is too low, too much in front of the hand or too much behind it when the ball is struck. These faults may cause the ball to go in any one of several directions instead of in the opposite court. Most players make their strokes with too loose a wrist. To correct this tendency, the serious player will get good results if he will strengthen his fingers, wrist and forearm muscles by some kind of special exercise such as squeezing an old tennis ball which has been punctured with a pin. In most cases, the grip is not strong enough to withstand the impact of a hard hit ball.

### *Types of Grips*

The Eastern or hand shaking grip on the forehand seems to be suitable in most cases and is advisable when the individual is not proficient in the use of some other. The Continental or hatchet grip of Perry is made for fast play in that no appreciable shift is necessary from backhand to forehand. A very strong forearm development is necessary in the use of this grip, as most of the power comes from this source. The Western grip, with the hand still farther behind the handle, is good for high bounding balls but is not suitable in making low shots, especially those on grass.

In holding the racket for the backhand stroke, the hand should be in such a position that the V between the thumb and first finger is slightly behind the top of the handle. If this V is too far in front, a loss of power results, and if it is too far behind the handle a cramped stroke is inevitable. The location of the thumb on this shot is a matter of individual preference. Some experts put the thumb directly behind the handle, but the present tendency is to place it across or wrap it around the handle.

I think it important that the "long" grip be used, with the little finger touching the leather. Because of weak muscles or the use of a racket which is too heavy, many players allow two inches of the handle to protrude below the hand with a resultant loss of power and cramping of the swing. The first and second fingers should be slightly spread to insure maximum touch of the finger tips and also to allow the racket to assume such a position that it is practically an extension of the forearm.



*Morey Lewis, sixth ranking National Junior and a Kenyon College sophomore, at the finish of one of his flat forehand drives. His grips are Eastern. He employs a minimum of spin on all ground strokes. With McNeill, he won the doubles championship in the Eastern Junior, Western Junior, Ohio Valley Junior and other tournaments. He is ranked second with McNeill in National Junior doubles.*

### *Footwork*

Faulty footwork is probably the cause of more missed shots than any other factor. A proper swing is quite often impossible because of the position of the ball relative to the body. Some of the mistakes of footwork are the following: feet too close together, stroke made with weight overbalanced on rear foot, feet not sideways to the net, knees too stiff and not flexed.

It is an outstanding fault with many players that they wait until the ball is almost upon them before beginning to place the feet for the shot. Even after Allison was a veteran on the Davis Cup team, he admitted that Mercer Beasley helped him tremendously by insisting that he start his feet working the instant he could determine the path of the ball. The player who follows this advice will find that instead of being rushed he will have extra time for making his shots.

We will now assume that our pupil knows the value of a sideways position to the net. In all sports where quick action and movement of the entire body are necessary, this body movement should be made from a fairly wide base and with knees bent. A boxer or golfer would find it all but impossible to put power into a punch or shot with the feet close together. The same is true of a tennis stroke, yet we see relatively good players making their shots with their feet only six to twelve inches apart, an inexcusable error, since in most cases there is ample time to place the feet properly. With the feet too close together, the knees are too straight and a bend down to the ball is not accomplished. If the hips and shoulders are to help make the stroke (which means weight shift at impact with the ball and distinguishes the play of experts), the feet must be placed wide enough to permit a good pivot. Recovery for the next shot will be facilitated if the toe of the front foot points to the net.

Various methods of developing good footwork may be employed. The muscles of the feet and legs may be strengthened by rope jumping or by tap dancing. Rising on the toes 100 times daily will also prove beneficial.

Tilden advises skipping to get the right foot forward when approaching the ball, while it is sound advice to step back with the right foot when crowded on the forehand and across with the left foot when it is necessary to reach.

There is no doubting the fact that a lot of attention and study must be given

*(Continued on page 33)*

*Inclement weather does not halt baseball practice at Kingswood School. The gymnasium allows pitchers and catchers to give batters practice in watching the ball throughout its journey to the plate.*

*As Athletic Director and Head Coach of Kingswood School, West Hartford, Connecticut, J. E. Gargan has had unusual success with both baseball and football teams. The baseball team coached by him last year won twelve games, while losing only one. His football coaching record for the past eight years is forty-two victories, two tie games and only four defeats. During five of the eight years, his football teams were undefeated. "I have a strong conviction," he writes, "that scholastic coaching is as different from collegiate coaching as is the teaching of any other branch of the educational system." While this article on batting is primarily for the secondary school coach, many college coaches and players will undoubtedly find that it contains suggestions beneficial to them. Coach Gargan graduated from the University of Illinois in 1925 and has since taken a master's degree from Columbia University.*

# Helping the Secondary School Batter

*By J. E. Gargan*
**Kingswood School, West Hartford, Connecticut**

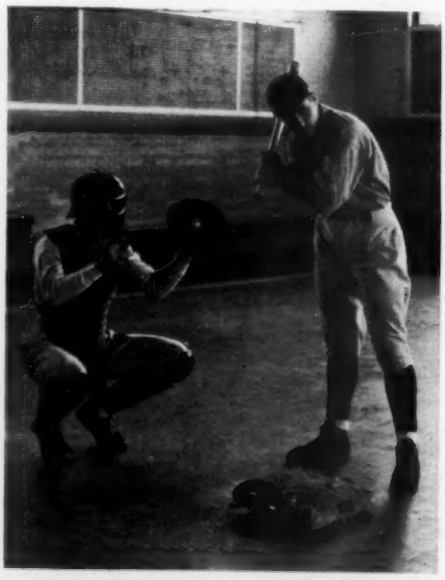
THE average secondary school baseball player pays little attention to learning to bat properly. The youngster who plays golf will study golf form as a matter of course and will accept the word of the "pro" as something to be accepted without question. He will try his best to learn the proper grip, stance, swing and follow-through, and when he finds his game slipping will accept an analysis of his faults and try to correct them. Suggest the same line to be followed in baseball, and you will find the young player skeptical. It has never occurred to him that the same procedure might help him in batting; or that if he expects to learn to bat well it is as necessary to learn correct style in hitting the moving baseball as in hitting the stationary golf ball.

### *How the Coach May Help*

The coach has a problem in getting his young players to realize that learning to bat is not a haphazard procedure. I do not believe that too much attention to form is useful or that certain form should be insisted upon at all times. There are, however, many ideas that the young player may learn about batting that should help him. As I realize that every coach has his own methods built upon his own ideas and affected by the material with which he works, I offer the following suggestions merely as some that I have found useful with our particular group.

I believe that the coach may help a batter's hitting by checking on the following points, and making wise suggestions and corrections when and where they appear necessary:

1. In the choice of a bat.



*This batter is being given drill in watching the ball all the way to the plate in an indoor practice session in the Kingswood School gymnasium.*

2. In the method of holding the bat.
3. In learning a good stance.
4. In taking the correct position in the batter's box.
5. In eliminating faults in the swing.
6. In practicing the run to first base.
7. In providing a good practice routine.
8. In giving attention to the mental aspects of the game.

### *Choosing the Bat*

I believe that the coach should pick the team bats, carefully selecting a set that will provide a variety of models. These bats should be 33 or 34 inches in length, as we seldom find a schoolboy who is capable of using a bat of over 34 inches. Each player should be helped in selecting the model and size best suited to his style. He should learn to find the balance point and to hold the bat properly. If the bat does not feel right to the player when he holds it at the balance point, he should change to another model.

The batter must learn to hold the trade mark of the bat up and to use a relaxed grip with the wrist of the top hand behind the bat. A bat that is too long or too heavy may cause the player to hold it too tightly, thus tensing the muscles of the forearm and preventing a free swing and follow-through. When the player holds the bat too tightly his knuckles show

*(Continued on page 41)*

# Form in the Hurdles

*By Weems O. Baskin, Jr.*
University of Georgia

THERE are many important factors that are very essential in the selection of an athlete that the coach plans to develop into a hurdler. It is very seldom that the coach is able to find a boy with athletic ability who is equipped with good physical make-up, competitive spirit and speed, three of the most important requisites for a great hurdler. The average coach has to be content to start out with boys who have two out of the three of these important factors. There are other things a coach might emphasize as being very important, although I believe most coaches will agree that the three listed are major essentials.

Many styles of hurdling have developed from the two or three different schools of form, through various ideas among the many coaches about the highly developed technique. The different styles have contributed to the large list of topnotchers. Each of us coaches feels that his own particular style is best, and rightfully so, because we are most familiar with it and have most confidence in it. However, we should never forget the boys that are helping to make the coach. Sometime, if we will stop to think about the numerous boys that we have coached, we will find that it would not take long to write about how we have developed our few good boys, but it would take quite a few pages to tell about the candidates who, because they lacked ability, did not develop, although many of them had the same coaching as the best boys and in some cases more of it.

*AS Assistant Track Coach at Alabama Polytechnic Institute and the University of Georgia, Weems O. Baskin, Jr., was instrumental in developing Percy Beard and Forrest G. Towns. The hurdling traditions which Baskin passed on to Beard and Towns have come down through Wilbur Hutsell of Alabama Polytechnic Institute from Robert I. Simpson, old University of Missouri hurdler, later Track Coach at Iowa State College.*

### *Requisites of the Hurdler*

First, we will take up the physical make-up for a good high hurdle prospect. We will all agree that a tall, rangy boy at least six feet (preferably six feet two

*Roy Staley, University of Southern California, high hurdler*

*Dan Caldemeyer, Indiana University, high hurdler*

*The pictures which accompany this article are of hurdlers who were on the 1936 Collegiate Honor Roll.*

*The illustration of Roy Staley shows the hurdler rushing his rear leg. Staley has maintained a straight lead leg. The position of Staley's arms will allow the hurdler to maintain better balance over the hurdle than will the arm position of Cope, his team mate, who is demonstrating the same fault with his rear leg.*

*Dan Caldemeyer of Indiana University shows excellent position of his arms in making the drive for the hurdle. His rear leg is in good position, but too much effort has been put into the kick in trying to attain height of his lead leg, which will make it a hardship to keep his balance as he gets on top of the hurdle and starts down.*

*In the picture of Forrest G. Towns, the University of Georgia athlete is displaying wonderful balance over the hurdle because of the bent knee in his lead leg, the position of his arms, which makes his shoulders square, and his delayed rear leg. He has maintained a little too much clearance over the hurdle.*

*Phil Cope is showing a tendency to rush his back leg, which causes the hurdler to come down off the hurdle with his feet too close together. In most cases in which this fault occurs, the body will be erect at the point of landing.*

*Forrest G. Towns, University of Georgia, high and low hurdler*

*Phil Cope, University of Southern California, high hurdler*

*Tom Moore, University of California, high hurdler*

or three inches) in height, weighing between 165 to 180 pounds, is an ideal type. We expect him to be agile, yet so rugged as to withstand the knocks and hazards that a hurdler confronts in his practice session and competitive races.

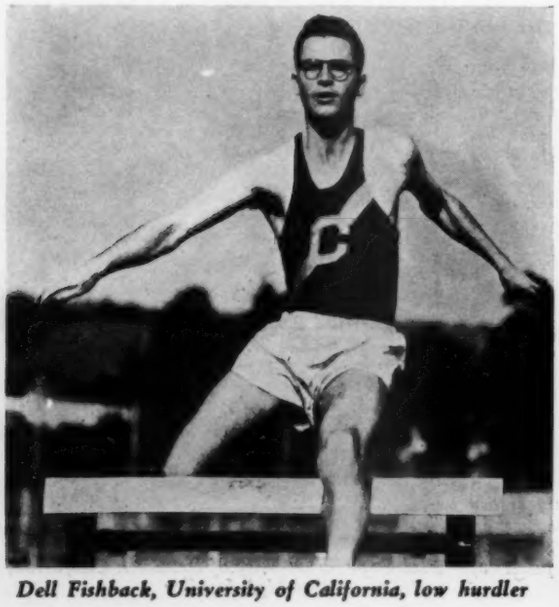
The next important requisite of the topnotch hurdler is competitive spirit, one of God's gifts to man, which is hard to explain, yet inborn and innate. We are able to recognize this spirit in a boy when we see him under pressure, yet we are unable to instill it into him.

Last and most important, we find speed is very essential for jumping the timbers. In

*Sam Klopstock, Stanford University, high hurdler*

*Herman Nelson, University of Oklahoma, 400-meter hurdler*

*Another view of Klopstock*



*Dell Fishback, University of California, low hurdler*

*Robert Osgood, University of Michigan, high hurdler, low hurdler, and 400-meter hurdler*

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***Tom Moore is taking off too close to the hurdle. His lead arm is in better position than is that of Richard Kearns (page 17), who has committed the same fault. Moore shows very evidently in this picture that he is striving for a cut-down over the hurdle rather than trying to get the cut-down coming off the hurdle.***

***The illustration of Herman Nelson shows the hurdler with spread arms, a position in which the athlete finds difficulty in getting economy in clearance or speed down over the hurdle. Nelson's back foot should be in line with the knee of his back leg.***

***Dell Fishback has allowed the knee of the rear leg to be carried through too low, which has raised his body until it is erect. His back leg and knee should be brought around to the side in order to avoid any possibility of tipping over the hurdle.***

***As Sam Klopstock of Stanford University is relatively small for a high hurdler, his form, as shown here, is unorthodox. He is compelled to jump the hurdle, instead of driving across. Klopstock's ability is such that he has been able to overcome the disadvantage of small stature. The illustrations show him in two different positions over the hurdle.***

***The picture of Robert Osgood of the University of Michigan shows a very fine position of the short or right arm and also a good rear leg. Osgood could benefit slightly by dropping his lead arm and bending the knee of his lead leg.***

*Joseph Patterson, United States Naval Academy, 400-meter and low hurdler*

*Another view of Patterson*

*William Schule, Washington and Lee University, 400-meter hurdler*

fact, speed is a most important factor in any type of athlete. Coaching is becoming so highly developed that team speed in different sports is as important as individual speed.

### *Training Program*

Assuming that we have a hurdle prospect with the necessary physical make-up, competitive spirit and speed, we will proceed to carry you through some of the training routine and practice sessions. We will suggest that the prospect take at least fifteen to twenty minutes of setting-up exercises each day before prac-

*(Continued on page 38)*

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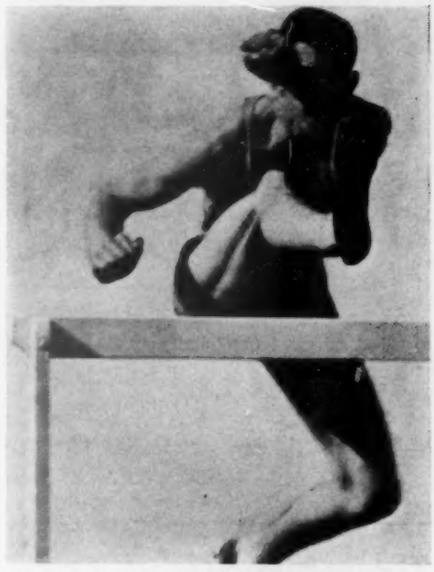
***Because Joseph Patterson was so versatile, he was used in the dashes, hurdles, broad jump and 440-yard run, and never had a chance to concentrate until after he had graduated, when he spent one month on the 400-meter hurdles. The illustrations show him in two positions: over the hurdle and as his lead leg comes in contact with the ground.***

***William Schule of Washington and Lee University is shown over the hurdle. His arms are spread too wide for effective hurdling form.***

***Richard Kearns has, like Tom Moore, taken off too close to the hurdle. He has therefore had to put all of his drive into height when the drive should be concentrated forward in order to get the necessary balance and speed. Kearns' left arm is crossing over in front of his body and in front of his eyes, thus throwing him off balance to a certain extent.***

***With the exception of Don Elser's right or short arm, he shows excellent form over the low hurdle in the accompanying illustration. He has a great drive forward and is not concentrating too much on the cut-down that athletes strive to get in the high hurdles. The lows should be taken in stride, in a manner similar to sprinting, with very little effort concentrated on clearance.***

***Estel Johnson is shown in the 400-meter hurdles. Johnson in this illustration demonstrates a very smooth action for the 400-meter hurdles, which is a difficult event to run. He would be able to clear these hurdles with just a little more ease if he would bring the rear knee through slightly higher over the barrier than is shown in the picture. This would avoid the possibility of having his knee hit the hurdle, a mistake that is very detrimental to hurdlers.***



*Richard Kearns, University of Colorado, high hurdler*

*Don Elser, University of Notre Dame, low hurdler*

*Estel Johnson, University of Southern California, 400-meter hurdler*

The ATHLETIC JOURNAL

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## *Overspecialized Training*

THE public press has recently carried reports of a study completed by the Carnegie Foundation which showed that teaching candidates prepared in teachers' colleges rank consistently lower than those trained in colleges of liberal arts. Further, it was reported that the study revealed that teachers of physical education rank lowest of all the teachers to whom the educational tests were applied.

We have not examined the report in full and are not prepared either to challenge the statement regarding physical education teachers nor indeed to accept the statement until time permits a more leisurely survey of the study. We wish to call attention, however, to the point made that candidates prepared in teachers' colleges rank consistently lower than those trained in colleges of liberal arts. If this report is to be accepted, and we have no basis for disputing it, then it may be timely to sound a note of warning against overspecialization on the part of those who are planning on physical education and coaching as a career. In fact, we incline strongly to the belief that a coach who is pretty much of an all-around man will climb to greater heights than will the coach whose interests have all been centered in the task of coaching one or more sports.

Some years ago, a certain engineering college admitted students direct from high school. It was found, however, that the graduates from this engineering college did not measure up to graduates from colleges that required two years of liberal arts, or in some cases four years of liberal arts, as entrance requirements. It might be reasonable to assume that a high school graduate would be expected in a four year engineering course to master the technical phases of engineering just about as well as could a liberal arts college graduate who later enrolled in a four-year engineering course. However, the latter undoubtedly would have had a broader background and consequently would be more of a force in his community than would the man who had limited his training to his chosen field.

A head coach or an athletic director these days must not only understand his own chosen work but he should have an interest in things which engross the attention of the leading men of his town or city. He is frequently expected to join the Chamber of Commerce, the Rotary or Kiwanis Club, to take part in church activities, to address many different groups of people and, in short, to make some contribution to his community aside from his active coaching work.

Some of our universities are conducting physical education courses designed to give special training to men and women who wish to engage in physical education and athletic teaching work. These institutions that we have in mind require that their graduates have a knowledge of literature and science, and have some contact with the various cultural phases of education; that they be able to write and speak clearly and forcefully. On the other hand, certain colleges in physical education are of the highly specialized variety. Time will tell whether the graduates from such institutions will measure up to the graduates of institutions that require a liberal education on the part of candidates for degrees.

## *Dictators*

A NUMBER of men who because of their position in the nation are entitled to a hearing have in recent weeks raised the question as to whether or not the United States, along with Italy, Germany and Russia, is to become a dictator country. Without assuming the role of a prophet and without even accepting for a moment the implications and statements of the gentlemen in question, we may be permitted to look ahead with an attempt to envisage the state of athletics in the schools and colleges, if our free enterprise and constitutional government system were to come to an end.

In the first place, if the usual pattern were followed, dictatorship would mean the end of a free press, free speech and of course the free school and the free college. It would not necessarily mean the end of athletics. Athletics have been recognized in some countries as a necessary concomitant of military training. Dictatorship means the militarization of the nation. If we should ever live to see such a dire calamity as the end of free government in America, we might expect our athletes to be regimented as a part of our armed forces. We saw something of the working out of this plan at the last Olympic Games. It was reliably reported that in some instances the athletes were mobilized and forced to train for the Olympic Games under the direction of army sergeants. It is not necessary to suggest that this idea is repugnant to the whole philosophy of amateur athletics. As we have known college and school athletics in the past, a boy was free to come out for the team or not as he saw fit. All that was required of him was that he pass a suitable medical examination and that he conform to the minimum requirements laid down by the coach or college authorities. The institution gave him an opportunity to engage in interinstitutional athletics, but he was not required to so engage. It

is not too much to state that, if the nations of the world go back to the old idea that the people are the servants of the state, the kind of amateur athletics with which we are familiar will ultimately pass into the discard.

## *Financial Prospects*

EVERY director of athletics in planning a building expansion program, and a sports program as well, must give some thought to the possible future. We have learned that our athletic fortunes are pretty closely correlated with the success or failure of our economic order. When business is good, money for athletic grounds, buildings and programs is more or less available, and, when times are bad, lack of revenue forces the athletic director to curtail his expenditures.

While no one can accurately foretell the future, the majority of analysts are predicting that, financially speaking, 1937 will be ahead of 1936. With 1938 promising to be even better than 1937, they suggest that the index in 1938 will be comparable to that of 1929.

However, the leading students of economic factors are suggesting the possibility, if not the probability, of another depression some time between 1940 and 1942.

When a man takes out life insurance, he does so not expecting that he is going to die at a given time but rather with the thought that some time he will die and must protect his family against loss of his usual earning power. We carry fire insurance hoping that our buildings will not burn down, but with the thought that, if the unfortunate possibility should happen, we would then be protected against complete loss. The director of athletics who contemplates that there will never be another depression, and who goes on planning for the future with the thought that business will keep getting better and better, may be sadly disillusioned some day. On the other hand, the conservative planner will avoid too many long term commitments, will, if possible, liquidate present debts and lay up a reserve for the next rainy day when and if it comes.

Many of the schools and colleges have added to their physical equipment at a time when government funds are readily available. While it is fine to have improved athletic plants, it is also necessary to remember that the increased overhead expense of these plants must be added to the annual budget, and increased revenues must be provided to take care of this extra expense.

## *Track Meets*

THE announcement of an interconference track meet to be held in June between the winners of the various events in the Pacific Coast and Big Ten Conference Meets will be of interest to all track coaches. Track athletics have never, generally speaking, been given the support that they deserve. There is no other sport on the athletic program that offers an opportunity to so many different types of men to show their ability as does track. Further, the criticisms generally made against college athletics are very seldom aimed at track and field athletics. This interconference meet may be the forerunner of other similar meets, coming either just before or just after the National Collegiate Athletic Association Meet.

The annual National Collegiate Athletic Association Meet, by the way, will be held this year in Berkeley, California, on June 18th and 19th. This meet has come to be the outstanding set of intercollegiate games held annually. Any college or university that is a member of the National Collegiate Athletic Association may send its athletes to this meet. For the past several years the games committee has been able to pay the expenses of the outstanding men who competed in the different meets. The same plan will be followed again this year.

The various relay meets have been tremendously worth while in the matter of stimulating interest in track and field sports. There is no event on the program quite so interesting as an exciting relay race. Coaches have learned that, in training their men to run on the various relay teams that compete in the April meets, they help these athletes to prepare for the dual, conference and national meets which follow.

The relay meets have gone a long way in the matter of selling track to the American people. The races are run off without any tedious delay between events. Almost all of the races hold the interest of the spectators. Thousands of unknown high school and college boys every year come into the limelight as a result of their achievements in the various relay meets.

## *Coaching Schools*

MANY athletic coaches have already made very definite plans for the summer vacation. Some will conduct playground activities in the town or city in which they reside. Some will conduct boys' camps. Others will travel, golf or fish. Still others will spend at least part of the summer in the pursuit of further education.

To the athletic coach who is vitally interested in his profession and in the boys under his supervision, perhaps no summer activity will be more helpful than attendance at one of the several summer coaching schools which will be operated during the vacation period. More valuable, perhaps, than the instruction received at such schools is the inspiration and good-fellowship available to any coach who attends. These schools are to be found in many parts of the United States. At least one is within a day's drive of practically every coach in the country.

## *Coaching Opportunity*

ANY qualified individual who would like to be considered as coach of track and basketball teams to represent a South American country in the Fourth Central America Olympic Games that will be celebrated in the Republic of Panama in 1938 is requested to write to this publication.

# More About Advanced Tumbling

*By Hartley D. Price*
University of Illinois

THIS article on tumbling, like the two previous articles in this series, deals with descriptions of advanced tricks, but in particular it is devoted to the building of routines from the individual stunts.

### *Tumbling Tricks*

These directions are for the advanced tumbler. The tricks should not be attempted by the beginner.

TINSICA—Place one hand on the mat; follow with the other; lift one foot; follow with the other. Push off with both hands and alight on the foot first lifted; follow with the other. In reality, a tinsica is a cartwheel executed in a forward direction. Illustration 1 shows the start of the trick and Illustration 2 shows the finish.

TINSICA-FRONT (TIGNA)—Start as for a tinsica; push hard with the hands; land on both feet. Throw both hands upward; duck the head; clasp the knees.

TINSICA-MOUNTER—Execute in a manner similar to the previous stunt, but alight on one foot at a time; lift from the hips; alight in a delayed tinsica.

SIDE SOMERSAULT—Start sideward; lift one arm upward and spring off the mat; tuck; duck the head toward the shoulder and pull hard until the turn is executed. (See Illustration 3.)

FORWARD SOMERSAULT WITH A HALF-TWIST—Spring forward and upward; tuck; turn the head and shoulders either to the left or to the right.

BACK SOMERSAULT WITH A HALF-TWIST INTO A SERIES—After completing the half twist, alight *on one foot at a time* in order to continue the series. (See Illustration 4.)

BACK SOMERSAULT WITH A ONE-AND-ONE-HALF TWIST INTO A SERIES—After completing the one-and-one-half twist, alight on one foot at a time and continue the routine.

WALK-OVER SOMERSAULT—The take-off for this stunt is the same as for a front handspring; attain maximum height; tuck.

BUTTERFLY—Start sideways; swing the arms to the right and to the left; spring at the same time; keep the head close to the mat and the feet high. (See Illustration 5.)

BUTTERFLY WITH A FULL TWIST—Start as for the butterfly; spring off the mat; snap the hands to the chest; turn the head in the direction of the spin.

BRIMS—After completing a tinsica, make a one-and-one-half pirourette on one foot; snap the arms to the chest and turn the head sideward.

BARREL ROLLS—Stand sideways; throw the left or the right arm outward; follow with the head and the left or right foot; make a pirourette with the body in a horizontal position.

CHASERS—These are cartwheels done in a circle and increasing in momentum.

BACK TINSICA—Place the right hand directly behind the right foot; throw the left hand, head and abdomen outward and backward. (See Illustration 6.)

CAST BACK SOMERSAULT—Execute a high lay-out; when at maximum height, relax; the head goes toward the mat; the feet are pulled under on the mat.

BRANDY (BARONI)—This is a round-off without the use of the hands. Start with the round-off step; whip the left hand along the side of the right foot; lift the head and kick up the right foot. (See Illustration 7.)

RUDOLPH (BRANDY WITH A FULL TWIST)—Start the same as the brandy; pull the hand to the chest; turn the head. (See Illustration 8.)

***THIS is the third of a series of articles on tumbling by Hartley D. Price, Assistant Professor of Physical Education and Varsity Gymnastic Coach at the University of Illinois. The two previous articles were published in the February and March issues. This article, like the others in the series, contains descriptions of several tumbling stunts and in addition a large number of routines, most of them for advanced tumblers and some for men of intermediate skill. Mr. Price, on a sabbatical leave of absence, is now studying at New York University.***

### *Building Tumbling Routines*

The essential requirements for tumblers in building tumbling routines are covered by the following suggestions:

1. Individual stunts should be completely mastered before the tumbler attempts to put them into a series or routine.
2. Timing of stunts is of paramount importance in routines.
3. An individual stunt must be executed in a certain manner in order to gain proper timing for the routine
4. The tumbler should have the general pattern of the complete routine in mind as he starts his series.
5. Regular practice is necessary.
6. Practice is more stimulating if the tumbler is able to work with a group of three or more other tumblers. In this way, one tumbler challenges another.
7. Practicing in a group also insures safety. As an individual tries a routine, the other members of the group can spot him.

Undoubtedly one of the greatest helps for a tumbler in learning tumbling routines is practicing in a group. When one man is attempting to execute a combination of stunts, the other members of the group should line up along the mat to prevent him from falling.

This challenging atmosphere inculcates confidence in the performer and inspires him to try difficult tricks. Each per-

***Illustration 1—Beginning of tinsica.***

***Illustration 2—Finish of tinsica.***

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## A. J. REACH, WRIGHT & DITSON

FOOTBALLS IT PAYS TO PLAY OF QUALITY

*Illustration 3—Side somersault.*

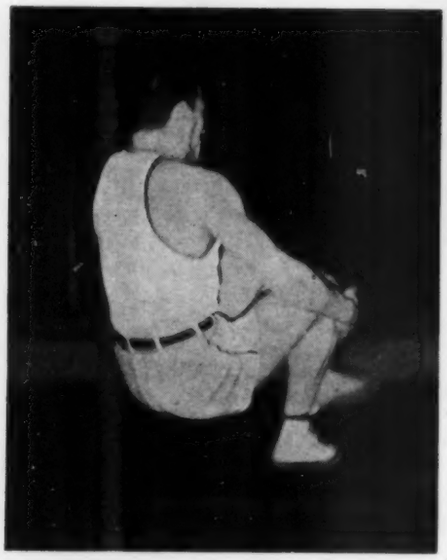

*Illustration 4—Back somersault with a half-twist into a series.*

*Illustration 5—The butterfly.*

*Illustration 6—Beginning of back tinsica.*

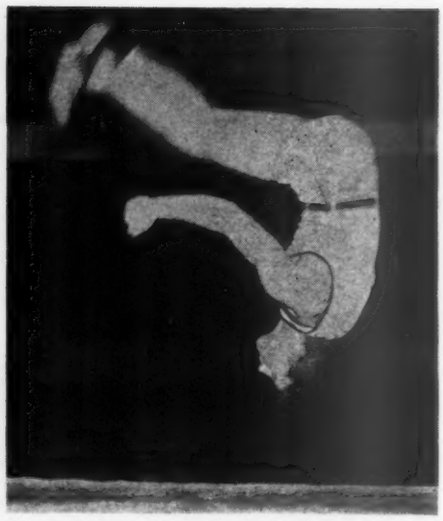

*Illustration 7—Brandy or baroni.*

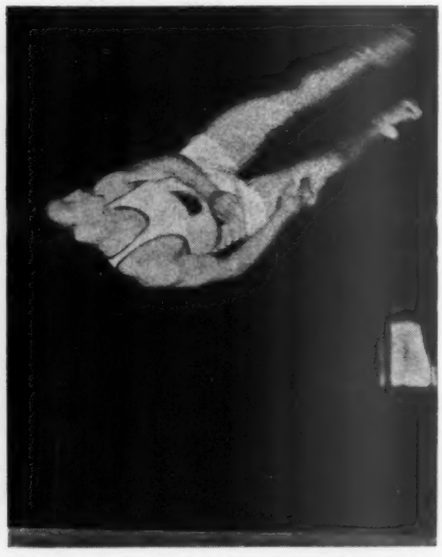

*Illustration 8—Rudolph, or brandy with a full twist.*

former tries to outdo the other tumblers with difficult and continuous series. When one individual does a series that appeals to the others, there is a definite tendency for all the other men likewise to accomplish that particular series. This stimulating condition creates a fine squad morale; the tumblers are willing, determined and happy.

### *Rules for Competition*

Various rules are in existence with respect to tumbling competition. For example, in the Western Conference, the tumbler is not permitted to go off the side of the mat. Until two years ago, the tumbler would be penalized if he went off the end of the mat during his exercise. The elimination of this part of the rule has improved the tumbling in the Conference, and it would be a definite improvement in the rules if the tumbler were also allowed to go off the side of the mat. He would lose some points on form, but he would not be deprived of the opportunity to complete his exercise. A tumbler has enough hazards to contend with without the addition of the illogical handicap of being forced to stay on the mat. In this connection, we might add that the National Amateur Athletic Union rules permit the tumbler to go off either the side or the end of the mat.

In the Western Conference, the tumbler is limited to three trips up the mat. He must start his run from a point fifteen feet from the end of the mat. The work is graded on the basis of seven points for difficulty, five points for form and three points for continuity. Each tumbler is supposed to execute two distinct exercises.

In the National A. A. U. tumbling rules, the performer must execute two exercises. The only restriction placed upon the tumbler is that the separate exercises must be completed within a time limit of one and one-half minutes. The National A. A. U. rules specify that no points shall be deducted if the tumbler goes off the mat during his routine.

### *Elementary Routines*

Routines can be built from the simplest tricks. In our series of articles, we did not describe any stunt simpler than the back handspring or flip-flop. However, we list below directions for some simple routines:

*(Continued on page 39)*

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## APRIL 2[illegible] a

## Des Moines Says

The Greater Des Moines
cordial invitation to athl
colleges and high school
tend the Twenty-eight

Iowa and its capita
of the Relays, one of t
athletic events of th
they will make ev
have your sta[illegible] he
and pleasan

**Founder**
**John L. Griffith**

**Director**
**Franklin P. Johnson**

**SAM FRANCIS**

*This is Sam Francis of Nebraska U.—All-American Fullback, and a member of the 1936 American Olympics track team. The burly 200-pounder's best mark with the shot put is 51 feet 9⅜ inches. See him at the Relays!*

## PROGRA

### Specia[illegible] Eve

100-Yard Dash, 120-Y[illegible]rd Hi
Put, Javelin Throw, Br[illegible]ad Jun
440-Yard Hurdles, Tw[illegible]-Mile
and High Jump. (Ope[illegible] only
versity men.)

### Universi[illegible] Se

440-Yard Relay, 880-Y[illegible]rd Re
lay, Sprint Medley Re[illegible]y, Dis
lay, Two-Mile Relay, F[illegible]ur-Mi
Yard Shuttle High Hu[illegible]dle Re

### College Sect

880-Yard Relay, One-M[illegible]le Rel
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### High Sch[illegible]ol S

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Two-Mile Relay.

# GHTH ANNUAL
# RELAYS

## 23 and 24

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schools of America to at-
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capital city are proud
one of the outstanding
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, Broad Jump, Discus Throw,
, Two-Mile Run, Pole Vault
Open only to college and uni-

### ersity Section

880-Yard Relay, One-Mile Re-
Relay, Distance Medley Re-
ay, Four-Mile Relay and 480-
Hurdle Relay.

### ege Section

ne-Mile Relay, Sprint Medley
le Relay.

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or Class A and Class B Schools;
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a, are in Class A.) 440-Yard
Relay, One-Mile Relay and

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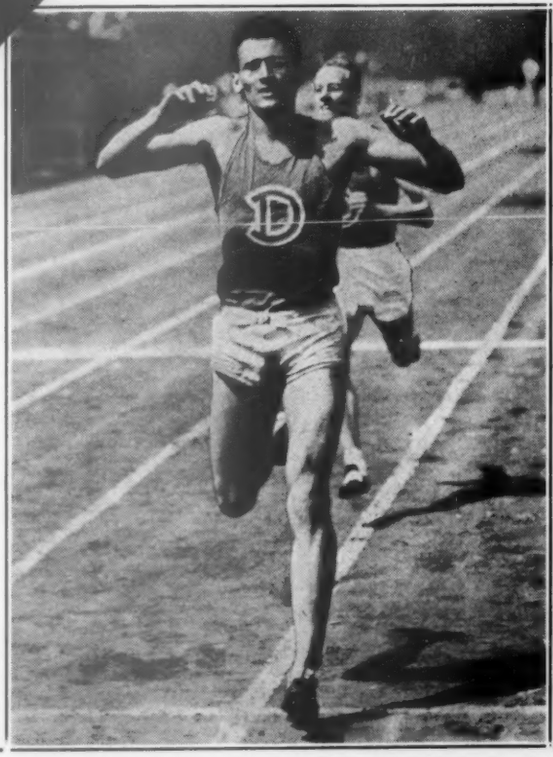
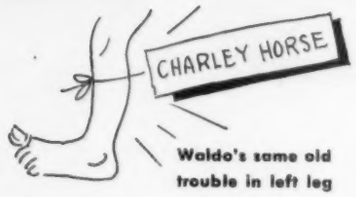
RAY MAHANNAH



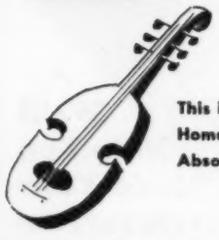
*This is Drake's track captain, Ray Mahannah. He recently broke the Missouri Valley Indoor Mile Run record. Plenty of competition will be his at the big meet—for, from all over the United States, top-notch athletes will flock to the Relays.*

# PLAYER'S LIFE




Waldo's same old trouble in left leg

How Oscar's feet felt after that 15-inning game



This is how fit Homer feels after an Absorbine Jr. rubdown

# PLAYER'S LUCK

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**For more than 40 years America's favorite remedy for relieving sore muscles, muscular aches, bruises, sprains, Athlete's Foot**


# Study of the Qualifications of Baseball Players

*(Continued from page 10)*

est rating of the ten qualifications of a batsman. Perhaps he has not stressed this very important phase of batting in practice sessions.

### *Significant Opinions*

In Table I, the positions on or adjacent to a line drawn from home plate through the pitcher's plate and thence to second base and center field are given the highest ratings. This bears out the assumption of baseball authorities that the backbone of a team consists of the catcher, pitcher, shortstop, second baseman and center fielder.

There is little difference in the ratings given the catcher and the pitcher in Table I. The two positions are so closely related that it is impossible to treat them separately. The catcher signals for the pitcher to throw a certain pitch, but it is the pitcher who must do the pitching. Occasionally a pitcher will "shake off" a catcher, but such action is not conducive to effective battery work.

The range of opinion revealed in Table I is surprising, especially in regard to the pitcher and the second baseman.

The preponderance of opinion in favor of control, as revealed in Table II, should

TABLE I

IMPORTANCE OF THE POSITIONS

| Position | Subject Interviewed | | | | | | | | | | | | | | | | Score* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pitcher | Pitcher | Pitcher | Catcher | Catcher | Infielder | Infielder | Inf.-Mgr. | Infielder | Outfielder | Outfielder | Outfielder | Outfielder | Coach | Umpire | Writer | |
| Pitcher | 1 | 1 | 1 | 5 | 1 | 2 | 7 | 2 | 2 | 3 | 2 | 1 | 1 | 4 | 1 | 1 | 35 |
| Catcher | 4 | 2 | 2 | 1 | 3 | 1 | 1 | 1 | 3 | 4 | 1 | 3 | 3 | 1 | 2 | 2 | 34 |
| First Baseman | 6 | 6 | 6 | 6 | 6 | 6 | 5 | 6 | 6 | 6 | 6 | 4 | 6 | 6 | 5 | 6 | 92 |
| Second Baseman* | 3 | 5 | 4 | 7 | 4 | 3 | 3 | 5 | 4 | 1 | 5 | 5 | 4 | 3 | 4 | 5 | 65 |
| Third Baseman | 7 | 7 | 5 | 3 | 7 | 5 | 6 | 7 | 7 | 5 | 9 | 8 | 9 | 7 | 6 | 7 | 105 |
| Shortstop | 2 | 4 | 3 | 2 | 2 | 4 | 2 | 3 | 1 | 2 | 3 | 2 | 2 | 2 | 3 | 4 | 41 |
| Left Fielder | 8 | 8 | 8 | 8 | 9 | 8 | 9 | 9 | 8 | 8 | 8 | 9 | 8 | 8 | 8 | 8 | 132 |
| Center Fielder | 5 | 3 | 7 | 4 | 5 | 7 | 4 | 4 | 5 | 7 | 4 | 6 | 5 | 5 | 7 | 3 | 81 |
| Right Fielder | 9 | 9 | 9 | 9 | 8 | 9 | 8 | 8 | 9 | 9 | 7 | 7 | 7 | 9 | 9 | 9 | 135 |

*The lower the score the higher the rating. This also applies to all other tables.

TABLE II

QUALIFICATIONS OF A PITCHER

| Qualifications | Subject Interviewed | | | | | | | | | | | | | | | | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pitcher | Pitcher | Pitcher | Catcher | Catcher | Infielder | Infielder | Infielder | Infielder | Outfielder | Outfielder | Outfielder | Outfielder | Coach | Umpire | Writer | |
| 1. Control | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 17 |
| *Control of a fast ball | a | a | b | a | b | a | a | a | a | a | a | a | a | b | a | a | 19 |
| Control of a curve ball | b | b | a | c | a | b | b | c | b | b | b | b | b | a | b | b | 31 |
| Control of a knuckle ball | e | e | d | e | e | e | e | e | e | e | d | e | d | e | e | e | 77 |
| Control of a screw ball | d | d | e | d | d | d | d | d | d | d | e | c | e | d | c | d | 65 |
| Control of change of pace | c | c | c | b | c | c | c | b | c | c | c | d | c | c | d | c | 48 |
| 2. Endurance—Condition | 4 | 2 | 3 | 2 | 2 | 5 | 5 | 2 | 5 | 5 | 4 | 5 | 2 | 3 | 1 | 5 | 55 |
| 3. Poise | 6 | 3 | 6 | 6 | 6 | 6 | 4 | 5 | 6 | 6 | 6 | 6 | 5 | 6 | 6 | 6 | 89 |
| 4. Ability to field position | 5 | 5 | 4 | 4 | 4 | 2 | 6 | 6 | 4 | 4 | 5 | 3 | 3 | 5 | 4 | 4 | 68 |
| 5. Knowledge of hitters | 2 | 6 | 2 | 3 | 5 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 6 | 4 | 3 | 3 | 53 |
| 6. Cleverness—Smartness | 3 | 4 | 5 | 5 | 3 | 4 | 2 | 4 | 3 | 2 | 2 | 4 | 4 | 2 | 5 | 2 | 54 |

*The pitches are rated alphabetically; however, the scores are computed numerically.

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serve as an excellent cue to young pitchers. The favorable score given "Knowledge of hitters" is characteristic of the professional game, where considerably more attention is given this phase of baseball than in amateur ranks. The high rating given "Control of a fast ball" in Table II reveals the fast ball as a decidedly favorite pitch.

As revealed in Table III, the infielder-manager and the umpire place considerable emphasis on "Speed in running." The emphasis given "Ability to hit" is significant. The baseball player of today is prone to emphasize offense to the neglect of defense. The third rank given "Ability to field position" is surprising.

In Table IV, the scores given "Knowledge of the game" and "Ability to handle men" in comparison with the other scores,

TABLE III

GENERAL QUALIFICATIONS OF A PLAYER

| Qualifications | Subject Interviewed | | | | | | | | | | | | | | | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pitcher | Pitcher | Pitcher | Catcher | Catcher | Infielder | Infielder | Infielder | Inf.-Mgr. | Outfielder | Outfielder | Outfielder | Outfielder | Coach | Umpire | Writer | |
| 1. Speed in running | 6 | 5 | 6 | 3 | 6 | 6 | 6 | 6 | 1 | 5 | 6 | 6 | 1 | 6 | 2 | 6 | 77 |
| 2. Ability to run bases | 4 | 6 | 3 | 6 | 4 | 4 | 5 | 5 | 5 | 6 | 3 | 2 | 5 | 5 | 5 | 4 | 72 |
| 3. Ability to hit | 1 | 2 | 1 | 2 | 1 | 2 | 3 | 3 | 3 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 29 |
| 4. Ability to field position | 2 | 3 | 2 | 4 | 3 | 3 | 2 | 4 | 4 | 3 | 2 | 3 | 3 | 2 | 4 | 3 | 47 |
| 5. Smartness—Cleverness | 5 | 4 | 5 | 5 | 5 | 4 | 1 | 1 | 6 | 4 | 5 | 5 | 4 | 4 | 6 | 5 | 69 |
| 6. Team play | 3 | 1 | 4 | 1 | 2 | 1 | 4 | 2 | 2 | 1 | 4 | 4 | 6 | 3 | 3 | 1 | 42 |

TABLE IV

QUALIFICATIONS OF A MANAGER

| Qualifications | Subjects Interviewed | | | | | | | | | | | | | | | | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pitcher | Pitcher | Pitcher | Catcher | Catcher | Infielder | Infielder | Infielder | Inf.-Mgr. | Outfielder | Outfielder | Outfielder | Outfielder | Coach | Umpire | Writer | |
| 1. Knowledge of the game | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 2 | 2 | 4 | 2 | 2 | 1 | 26 |
| 2. Impartiality—Fairness | 4 | 3 | 3 | 2 | 3 | 3 | 2 | 5 | 4 | 3 | 4 | 4 | 3 | 4 | 4 | 4 | 55 |
| 3. Ability to teach baseball | 2 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 50 |
| 4. Ability to handle men | 3 | 1 | 2 | 3 | 2 | 1 | 4 | 1 | 3 | 4 | 1 | 1 | 1 | 1 | 1 | 2 | 31 |
| 5. Ability to sell himself to writers | 7 | 6 | 7 | 7 | 7 | 7 | 5 | 6 | 7 | 6 | 7 | 6 | 7 | 6 | 6 | 6 | 103 |
| 6. Ability to sell himself to fans | 5 | 5 | 5 | 6 | 6 | 5 | 6 | 7 | 6 | 5 | 5 | 5 | 6 | 7 | 7 | 7 | 93 |
| 7. Ability to sell himself to employers | 6 | 7 | 6 | 5 | 5 | 6 | 7 | 3 | 5 | 7 | 6 | 7 | 5 | 5 | 5 | 5 | 90 |

TABLE V

QUALIFICATIONS OF A BATSMAN

| Qualifications | Subject Interviewed | | | | | | | | | | | | | | | | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pitcher | Pitcher | Pitcher | Catcher | Catcher | Infielder | Infielder | Infielder | Inf.-Mgr. | Outfielder | Outfielder | Outfielder | Outfielder | Coach | Umpire | Writer | |
| 1. Healthy eyes | 3 | 10 | 6 | 1 | 4 | 5 | 2 | 7 | 1 | 2 | 4 | 3 | 10 | 3 | 6 | 2 | 69 |
| 2. Large hands | 10 | 8 | 10 | 3 | 9 | 10 | 9 | 9 | 10 | 10 | 9 | 8 | 8 | 8 | 5 | 9 | 135 |
| 3. Muscular strength | 5 | 6 | 4 | 8 | 5 | 6 | 8 | 8 | 8 | 7 | 3 | 4 | 7 | 7 | 2 | 8 | 96 |
| 4. Co-ordination—Timing | 6 | 5 | 1 | 4 | 1 | 2 | 1 | 1 | 4 | 5 | 1 | 2 | 1 | 1 | 3 | 1 | 39 |
| 5. Relaxation—Poise | 4 | 9 | 5 | 7 | 6 | 4 | 6 | 5 | 7 | 4 | 6 | 5 | 6 | 9 | 7 | 7 | 97 |
| 6. Ability to pick good balls | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 2 | 1 | 2 | 2 | 1 | 3 | 34 |
| 7. Stance—Form | 9 | 3 | 7 | 10 | 10 | 8 | 10 | 10 | 2 | 6 | 8 | 7 | 9 | 10 | 8 | 4 | 121 |
| 8. Follow-through | 8 | 7 | 8 | 5 | 7 | 9 | 5 | 4 | 6 | 8 | 7 | 9 | 3 | 4 | 4 | 6 | 100 |
| 9. Ability to follow the pitch | 2 | 1 | 3 | 6 | 3 | 1 | 4 | 3 | 9 | 1 | 5 | 6 | 4 | 5 | 9 | 5 | 67 |
| 10. Stride | 7 | 4 | 9 | 9 | 8 | 7 | 7 | 6 | 5 | 9 | 10 | 10 | 5 | 6 | 10 | 10 | 122 |

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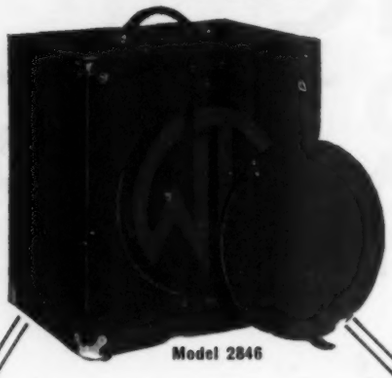

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TABLE VI
QUALIFICATIONS OF A FIELDER

| Qualifications | Subject Interviewed | | | | | | | | | | | | | | | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pitcher | Pitcher | Pitcher | Catcher | Catcher | Infielder | Infielder | Infielder | Inf.-Mgr. | Outfielder | Outfielder | Outfielder | Outfielder | Coach | Umpire | Writer | |
| 1. Accuracy in catching balls* | 3 | 6 | 2 | 5 | 1 | 6 | 5 | 5 | 3 | 2 | 2 | 2 | 4 | 1 | 6 | 5 | 58 |
| 2. Accuracy and speed in throwing | 2 | 3 | 5 | 4 | 2 | 4 | 4 | 4 | 4 | 3 | 4 | 3 | 3 | 2 | 1 | 4 | 52 |
| 3. Getting the jump on the ball | 4 | 1 | 1 | 2 | 3 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 5 | 4 | 3 | 34 |
| 4. Getting balls away quickly | 6 | 4 | 4 | 3 | 5 | 3 | 3 | 3 | 5 | 4 | 3 | 4 | 2 | 4 | 2 | 2 | 57 |
| 5. Tagging baserunners | 5 | 5 | 6 | 6 | 6 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 5 | 6 | 92 |
| 6. Accuracy in fielding ground balls | 1 | 2 | 3 | 1 | 4 | 1 | 2 | 1 | 1 | 5 | 5 | 5 | 5 | 3 | 3 | 1 | 43 |

*This qualification covers both batted and thrown balls.

is significant. Obviously, a manager's ability to sell himself to the writers of baseball, to fans and to his employers is not considered important as compared with the other qualifications.

The experts agree, as revealed in Table V, that a player's ability to hit is largely dependent on his "Ability to pick good balls." Waiting for a good ball, timing the swing and keeping the eyes on the pitch are essential to successful batting. Fifty per cent of the experts give the highest rating to "Co-ordination—Timing" in Table V.

The score given "Getting the jump on the ball," in Table VI, is significant. This refers to ground balls as well as to fly balls. Each of the four outfielders gave first rating to "Getting the jump on the ball." The range of opinion in "Accuracy in fielding ground balls," in Table VI, is significant.

# Organizing the Pitcher's Thinking

*(Continued from page 9)*

*10—Does the batter indulge in prancing, nervous moving of the feet while waiting to hit?*

Use a change of pace. The batter will be late on the first fast ball but may time the next one. Work in accord with his grip.

*11—Does the batter drop his rear shoulder as the swing is made?*

Pitch high.

*12—Does the batter take too short a stride?*

Pitch low.

Faults that will cut power but not ability to hit safely are suggested in the next four questions.

*13—Does the batter step back with his rear foot, thus retarding the swing?*

Use a change of pace. The batter may time his hit if the fast ball is continued.

*14—Does the batter raise his rear foot or drag his rear foot on the swing, thus cutting the distance of the hit?*

Pitch according to his grip and step.

*15—Does the batter lean back on the swing?*

Feed outside balls.

*16—Does the batter turn his head, not watching the bat meet the ball?*

Pitch low.

### *Points to Be Remembered*

A—The pitcher throws to the batter's weakness. The fielders play to his strength.

B—Battery men must remember what type of ball each batter hits. To give him that ball again may result in a "battery error of judgment."

C—Curves and fast balls must be aimed at the plate if the batter is standing far away from it.

D—All curves must be aimed according to what is desired.

Curves aimed at the batter may break over the inside edge of the plate and give the following results: (1) Curve over for a strike. (2) Curve to land on the bat handle. (3) If the batter steps "in the bucket," curve to the spot this man likes.

Curves aimed at the inside edge of the plate may give the pitcher the following results: (1) Curve for a strike over the outside edge of the plate. (2) Curve wide for a ball out of reach of the bat. (Aim curves here if the batter's bat does not reach over the outside edge of the plate. This latter may be the result of stepping-away, standing too far from the plate or choking the bat.)

Curves aimed at the outside edge of the plate may result in the following: (1) Cause the batter to swing and miss. (2) Help in breaking up the squeeze or hit and run plays. (The pitch-out for such plays should always be a fast ball.)

E—If the bunt is in order, be prepared for it ahead of time. Expect it from the first ball pitched and work accordingly. Feed the high ball, but make it a strike. The high ball is often fouled or popped up for an easy put-out.

F—If "in the hole" with men on bases, act as follows: (1) Hold the runner close. (2) Expect a play such as the hit and run. (3) Expect that the batter will or should hit. (4) Show courage, grit and control, and don't give "too good a ball."

G—The rear box batter is likely to hit the ball according to where it is pitched; that is, the right-hander will usually hit the outside ball to right field and the inside ball to left field. He stands where he does so that he can see the pitched ball longer and can take it after the break of the curve.

H—Mid box batters may hit the "hooks" just as they break. They may be fooled by the hook aimed at their hands which curves over the inside edge of the plate, especially if they hug the plate.

I—Front box batters attempt to hit the ball before the curve breaks. Not many batters take this position but, if faced by

*H. S. DeGroat*

one, the battery men should note if he steps out of his box as he swings. The umpire's attention should be drawn to anyone who steps out of the box on the swing. Such a batter may creep forward with each swing of his bat while the pitcher is winding up and then be out of the box when the ball arrives at the plate. The rules call for an out if a batter hits with either or both feet outside the batter's box, and no bases may be run or runs scored upon such an act. Batters standing in the front of the box are likely to hit the fast pitches to the "wrong field" when they connect.

J—Remember that a pitcher can step back off the rubber if a baserunner starts a steal. No balk can be called, and the chances of a delayed or double steal working successfully will be lessened. If the pitcher steps off the rubber before the wind-up is started, when an attempt is made to steal home, the throw home will not be considered a pitch and cannot be

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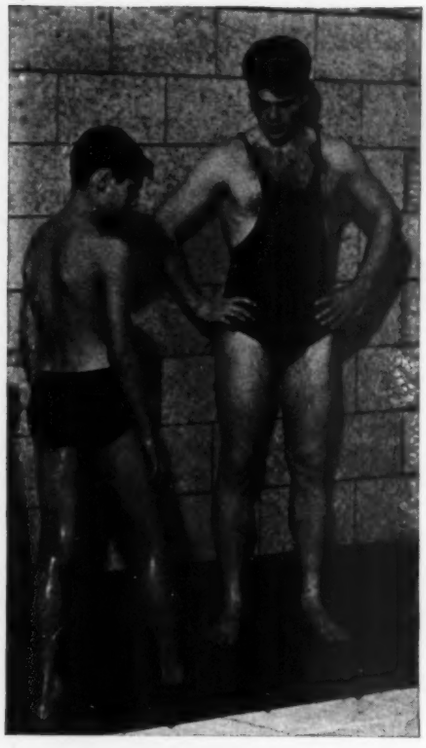

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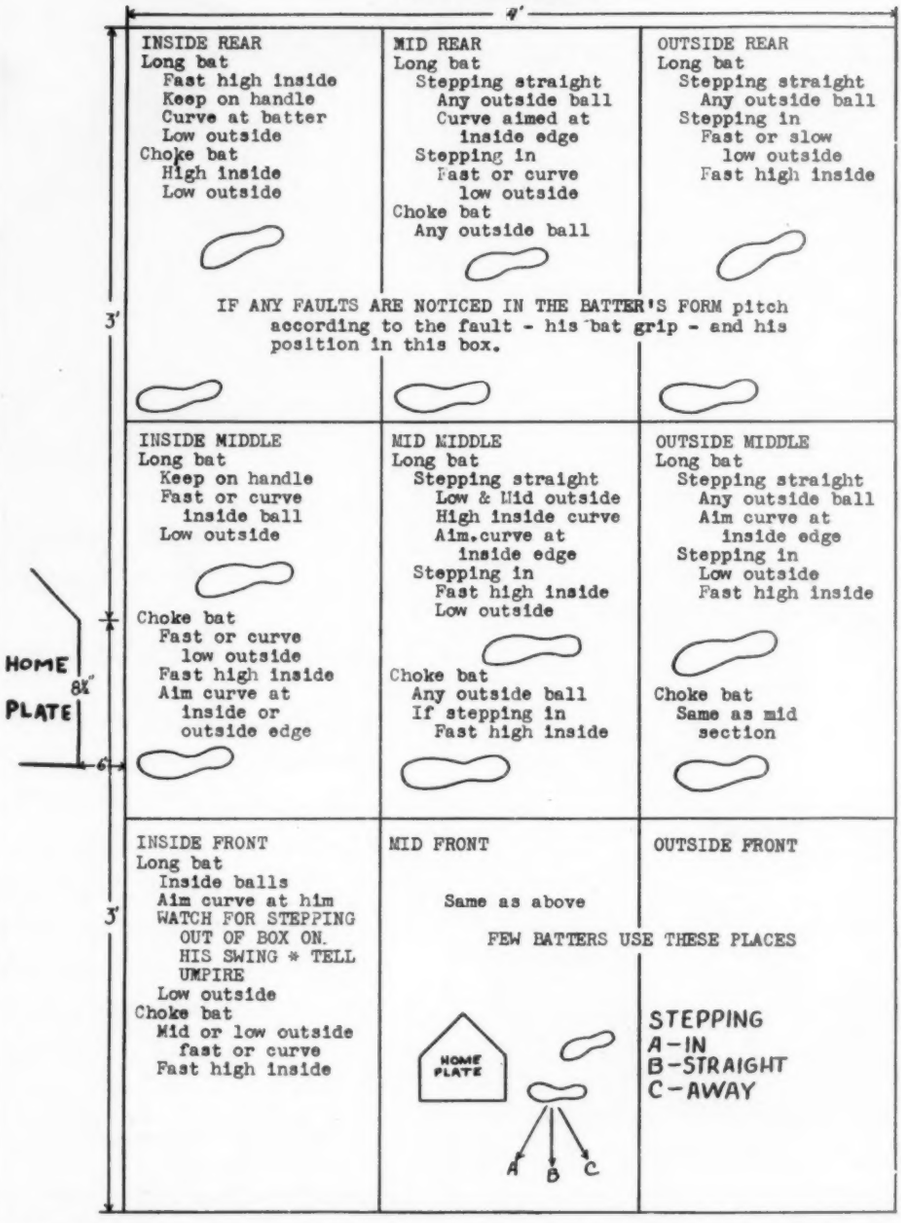


legally swung at by the man who is at bat.

The recruit must be willing to work hard; keep alert to pick up all suggestions that will help him. He must develop his control until he has so much confidence in himself that it becomes second nature to place the ball where he wishes. Once he has conditioned himself and developed his control, he has reached a point where his mind is left free to think of the situations that arise when he is out on the mound. He is now free to work for a proper knee action that will keep base runners from getting a break on the steal. He can feel at ease and can be free to think and to vary the time of delivery with men on base, holding them close or catching them off base.

When the young recruit has mastered his delivery fundamentals to that point where he begins to think and to see the plays ahead, he is starting to play heads-up baseball and will soon have the confidence of his team mates and coach. When the recruit has reached a point where he will attempt a set play to catch the runner on second, as he watches a strong hitter step up to the plate who might hit and score the runner, he has begun to see a play or two ahead and has promise of becoming a good pitcher. Compare him with the lad who can see only that he has a runner on second and a batter in the box and who starts his delivery without another thought in his head other than to stop the hitter.

Any pitcher who has the confidence of his team has half the game won. Without that confidence, he will find one or more team mates falling down in the tight places, and his position on the rubber will become a very difficult one. The young recruit must bear in mind that, if he is to earn his place in the sun, he must develop his own control, his own self-confidence, the confidence of his team mates and be so well acquainted with himself

that he knows just how much work he must do to keep himself at perfection. All these things base themselves on the player's natural ability as a pitcher, how much he absorbs from his coach, how much hard work he does and, lastly, whether he can school himself to think as he works. He must be cool enough to think, and think ahead so that he is always in the right spot at the right time.

## Making Ground Strokes in Tennis

*(Continued from page 13)*

to the question of footwork if the individual is ever to play the game of tennis expertly.

### *Swinging on the Ball*

We now have the pupil with his feet properly placed, with a satisfactory grip on the racket and ready to make the stroke. We may say that there are three parts to the shot, the backswing, the meeting of the ball, which includes the weight shift, and the follow-through. The kind of backswing is important. In some cases it is too elaborate. We are all familiar with the beginning golfer who wraps the club around his neck on the backswing and who, when he is finally ready to hit the ball, finds that his club is about six inches too long. As in golf, so in tennis; the backswing should be ample, but if it is overdone the chances of meeting the ball squarely are considerably diminished.

A slight loop may be made at the extreme end of the backswing, but a number of good players start the swing from practically a stationary position. I believe most players suffer from too much backswing rather than from not enough. Another point worth mentioning is that the

*Eugene Lambert*

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less backswing, the more body action necessary to secure pace; with the result that the desirable tendency to rotate the shoulders early is encouraged.

The position of the ball in relation to the body now becomes of the utmost importance. It is desirable to take as many balls as possible at about the level of the waist, and the necessary maneuvering must come from anticipation and quick footwork. Ample room must be allowed for a fluent swing in front of the body, as the reach in this direction should be too much rather than too little.

The type of stroke, flat, forward spin or under spin, is closely connected with the question of meeting the ball squarely. Many shots are brought off poorly because the racket does not meet the ball properly; indeed, in too many cases the gut is not used at all. Timing is very important, and the lack of it causes the ball to go off at embarrassing angles.

In the top spin shot, the racket often crosses the line of flight of the ball too soon with the result that the ball strikes below the center of the racket head and finds the net. Again in making a sliced drive, the racket face is opened or beveled back too soon, with a poor shot the frequent result. It would seem that the best way to insure success would be to keep the racket head and handle in line with the flight of the ball as long as possible both as regards backswing and follow-through. Where the stroke is too nearly a circle, the ball flies off at a tangent and contact with the racket strings is so slight that control is difficult. The player should hit through the ball and point the racket head in the direction he wants the ball to go. He should cultivate the flat hit ball first; the spins will follow naturally if he wants them. The racket head should first meet the ball perpendicular to the ground and then be turned with the forearm, not the wrist, if spin is desired. Accuracy must precede speed, but Joe Gettum and Pete Swattem must both be cultivated if the top rungs are to be scaled.

# The Technique of Relay Running

*(Continued from page 6)*

relay. Considerable drill is required before the boys learn to use sufficient judgment to start at the right time.

In the shuttle hurdle relay, of course, the baton is not used. But the writer recalls such a race in which the stick was at least prescribed. After the 1924 Olympics held at Paris, the American track team was invited to England to a relay carnival with Great Britain. A 480-yard shuttle hurdle relay was part of the program. As is well known, in this event alternate runners alternate in direction, or "shuttle." Up to this time, I believe, a shuttle hurdle relay race had not been held in England. On the day before the meet, a British official advised the writer, who had been assisting the American team in the hurdles, that a baton would be used in this race. So we tried using the stick. It was impossible to pass the baton as the incoming runner would be moving too fast, and the outgoing runner would be facing him and ready to go in the opposite direction. After about ten tries, we decided that the baton could not be used and so advised the official, who finally came out on the track, saw that the boys could not grab the baton while going in opposite directions and decided to have each runner touch the next one for the relief.

Relay running on small indoor tracks is a hazardous undertaking. The pole position gives a considerable advantage, especially if there are four or five teams in competition, because the team on the outside position must go out and then come in on the pick-ups. At the recent Indoor Eastern Intercollegiate Meet heats were necessary to eliminate some of the teams. Six teams competed in the final, which is just about three too many on an eleven lap track. There is bound to be jostling and pushing with so many teams in a race.

### *Placing of Runners*

Relays are sometimes won by the proper placing of the runners. Inasmuch as a lead means a distinct advantage, many coaches put their star man either in first or second place, hoping to obtain enough lead to offset the change of runners later in the race. If a lead of 10 yards is gained by the first man, the team with good pick-ups can often increase this distance close to 25 yards, as the fresh man in each relay usually gains several yards on a tired man who is finishing. Of course, if the star man does not gain the required distance, then the strategy is defeated.

Last year, in the Heptagonal Meet held at Cambridge, Massachusetts, in which Harvard, Yale, Pennsylvania, Cornell, Princeton, Columbia and Dartmouth competed, a 1600-meter relay race was held, each man running 400 meters. Hoffstetter, the star of the Dartmouth team, who had previously run a race, told the writer that he felt tired and asked if he might run the second leg of the relay instead of the anchor. The first Dartmouth man lost about 10 yards, and Hoffstetter, running a phenomenal race, regained the distance lost and about 10 yards more; so the next two men swung through for a victory. This move probably won the relay for Dartmouth, but it was not the writer's intention to run the team in that order.

A really good runner is valuable to any team. When a team is gifted with a quarter-miler who is outstanding, the coach can instruct his other three boys in the mile relay just to hang on and let the star

pull the team in a winner. If a team does not have an outstanding quarter-miler, then the coach must instruct each of his boys to carry the pace, trusting to luck that there will be at least one weak man on the other teams.

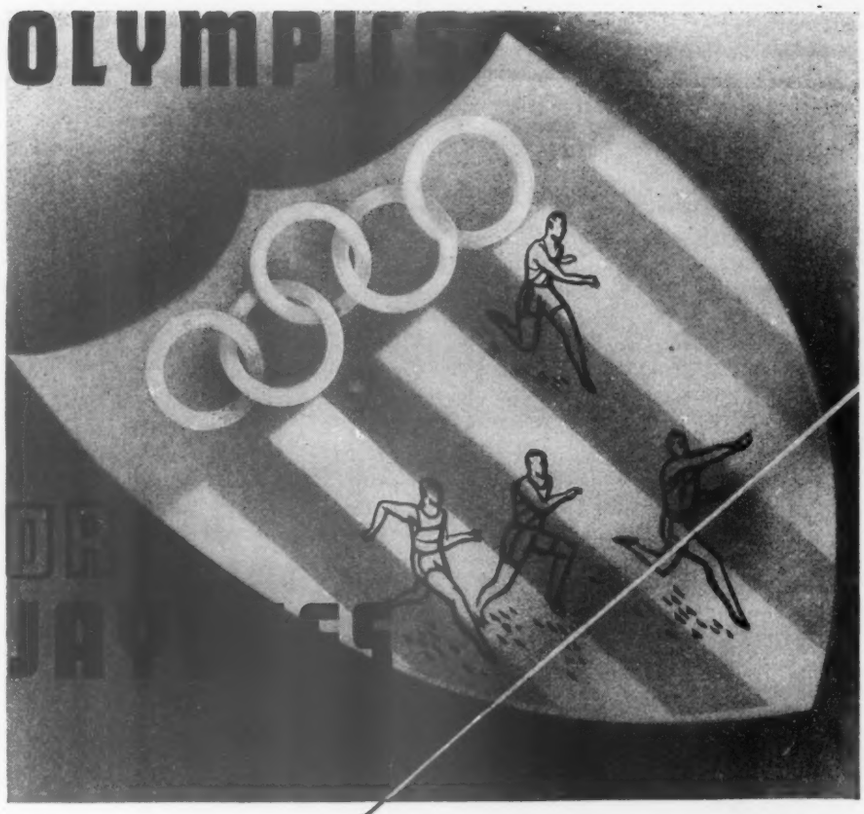
In the Heptagonal Meet referred to above, Dartmouth had just an average

*Harry Hillman*

group of sprinters in the 440-meter relay; that is, two were fairly good while the other two were mediocre. Although the boys had practiced the pick-ups almost daily for over a month, they could not seem to get the necessary three good pick-ups, and apparently their only chance of a victory lay in perfecting their passing. On the day of the race, the pick-ups were practically perfect, and Dartmouth won from three other teams which really had better sprinters.

It takes considerable time for college runners to learn pace and what they are capable of doing. Some men are slow starters and fast finishers, while others are fast starters but weak near the end of the race. So it is very important that each runner through experience know his capabilities; this takes sometimes two or three years. A senior in college is usually able to know what pace he is setting and whether or not he can stand that pace. It is a good idea to hold the watch on the boys regardless of the pace at which they are running. If they are swinging through a 440 in 53 seconds, they should differentiate that from a 50-second quarter mile. I usually ask our men to run a certain pace and then have them try to guess what the time is. Knowledge of pace is very important in relay running, especially in a one- or two-mile race. If a runner happens to be out in front, he must know about how fast he is going in order to run the race to the best of his ability.

One peculiar thing about relay running is that an athlete will sometimes outdo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himself in a relay race because he knows that he is a member of a team and must do the best he can. Some years ago, Dartmouth won the Indoor Intercollegiate relay championship and later in the same year won the Pennsylvania Relay Carnival one-mile relay. In both these races, it was necessary to use a substitute. This particular substitute, considered only an ordinary runner, performed in spectacular manner, doing something in both these races that was just the opposite of what he should have done. In the indoor race, when the Dartmouth man in first position finished his lap in the lead, the substitute, running second, went from first to last place in less than half a lap and then, half a lap from home, he came from last place to first. In the outdoor meet, we figured that with twelve teams facing the starter there would be a jam. So the substitute, running the first lap this time, was instructed to swing in the rear of the crowd and make a bid in the last 150 yards. He came up to seventh position, and the other three men of the team gradually picked up enough yardage to give Dartmouth a victory. This substitute ran two great races. He never before had shown more than ordinary ability.

Relay racing often affords amusing incidents. At the recent Eastern Intercollegiates, a freshman medley relay race was staged in which the last boy on each team ran a mile. One of the runners after receiving the baton put it in his shirt, dropping it in at the neck. The rules state that the baton must be carried in either hand. The boy was disqualified by the officials.

Several years ago when wooden batons were used, one runner dropped the stick in passing to a team mate, and a runner of another team stepped on it with his spikes, crushing it into splinters. In his excitement, the boy who was supposed to receive the baton spent several seconds picking up the small pieces. Later, spectators and officials burst into laughter as they watched him try to pass the handful of wood to the next runner.

# Teaching Shot Put Form

*(Continued from page 11)*

**Illustration 8—Position of the shot, on all four fingers and the thumb. This and the following four photographs of Michael were taken several months after the preceding illustrations.**

the right foot. (See Illustrations 5 and 9.)

2. The position of the shot in the right hand and relative position of the right hand to the body was unchanged. (See Illustration 8.)

3. A slight body crouch was used. (See Illustration 9.)

4. The left foot was swung lightly around, sometimes in front of and at other times back of the right foot. Later, Michael formed the habit of swinging the left foot across and then out. (See Illustrations 5 and 10.)

5. A deep bend of the right leg was made, and the left foot was kicked vigorously forward. (See Illustration 10.)

6. The right foot was carried to the center of the ring as quickly as possible. (The shot putter should try to have the right foot catch up with the left. During the first part of the hop the right foot should be dragged and its sole should never be over one inch from the ground.)

7. A little deeper body crouch was made as the right foot landed in the center of the ring; almost simultaneously the left foot landed about six or eight inches to the right of an imaginary line perpendicular to the center of the toeboard. Then a new movement, described below, was introduced.

8. The hips were most vigorously slid forward and rotated toward the front as the right leg and right arm were straightened simultaneously. The head was held to the extreme left, with the chin up.

9. At the top of the push (Illustrations 6 and 11), the hand was flipped forward and an effort was made to follow the shot upward and out. (We called this hanging on to the put.)

10. Balance was maintained by bringing the right foot forward and placing the ball of this foot, now pointing in the opposite direction, exactly on an imaginary line perpendicular to the center of the toeboard. The left leg was jerked violently backward and thrown high in the air. The body was approximately parallel to the ground and perpendicular to the plane of the put. The head was held high, with the eyes following the flight of the shot. If the technique was correct, the body was poised and stationary in the above position. (See Illustration 7.) Otherwise, it was necessary for the shot putter to bend the right knee and to hop up and down, vigorously swinging the left arm and kicking the left leg to keep from falling out of the ring. (See Illustration 12.)

To the uninitiated, this form of keeping the shot in the same plane, of flipping the wrist and of holding on to the put after the follow-through, resulting in a delayed reverse, gives the illusion of throwing the shot.

The advantages accruing to this style of shot putting appear to be correct height to all puts, speed and co-ordination across the ring and the knack of seldom fouling.

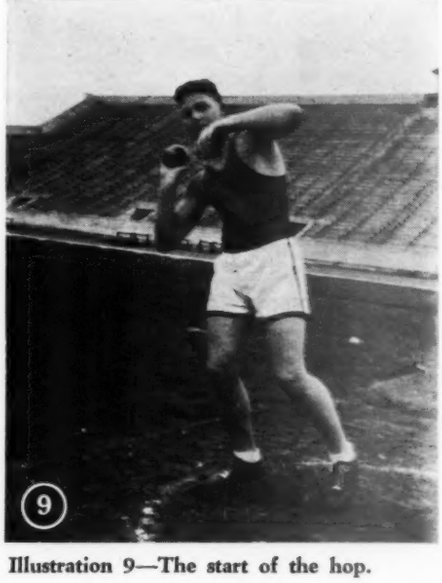

**Illustration 9—The start of the hop.**

**Illustration 10—Getting under way.**

To complete the picture of background and environment, the following comments are pertinent: Michael has never been a coaching problem. He has always listened to and conscientiously tried to follow instructions. Regardless of the results, he has never seemed to feel that he has done as well as he should. He has always appeared to derive greater satisfaction from watching a team mate toss the shot over the fifty foot mark than he has by following him into the ring and overshooting his effort by a foot or two.

Michael's academic work at Technical High School was fully as outstanding as were his athletic accomplishments. Michael fortunately lived near the University of California campus, and his friendship with Brutus Hamilton was invaluable in his development. He spent many hours on Edwards Field, listening to instructions given to University of California athletes.

Illustration 11—The start of the reverse. The blur indicates the shot. Note its height. This put was for 58 feet 3⅛ inches.

Illustration 12—Fighting to stay in the ring.


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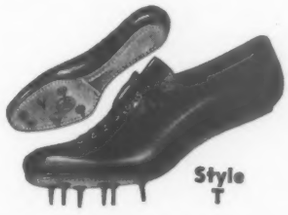


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# Form in the Hurdles

*(Continued from page 17)*

tice starts. These exercises will consist of both ground work and various limbering-up maneuvers over and around an individual hurdle. It is imperative that any athlete develop a sweat by finishing up all these exercises with slow and fast jogging to avoid the pulling of muscles. The training and work given a hurdler before the season starts depend upon the time available before the first meet and the importance of the meet or competition to be met.

The tentative schedule of weekly practice which we follow at the University of Georgia with Forrest "Spec" Towns is similar to the one followed at the Alabama Polytechnic Institute with Percy Beard, while I was there as assistant coach.

Monday consists of a light workout and a few setting up exercises. Tuesday will start off with a number of setting up exercises, a few starts; the athletes sprint from 20 to 30 yards. After the hurdler has had time to rest for a few minutes, we have him put up three hurdles, either 12 or 9 yards apart. This enables the hurdler to do work over the hurdle in order to develop balance at a maximum speed. In the first instance, where we place the hurdles 12 yards apart, we find that it is good practice for the athlete to run through the three hurdles, using five strides between each hurdle. This practice enables him to work entirely on form and balance; the latter is the most important thing in developing a good hurdler. There has never been a great hurdler who did not have fine balance over the hurdle. With the hurdles placed 9 yards apart, we are able to increase the speed of our workouts, developing form by using three strides between these hurdles, without the burden upon the athlete of having to fight for each hurdle as he goes over it. We try to spend at least thirty to forty minutes on this type of work without trying to rush the boy; if he becomes too tired, he is unable to improve in his technique of form and balance.

Wednesday consists of setting-up exercises, two or three starts and then running at full speed over three hurdles spaced at the proper distance. This is done after we have spent from ten to fifteen minutes working on form with the hurdles placed either 9 or 12 yards apart.

Thursday the hurdler will work entirely with the sprinters; he does not work with or look at any hurdles.

Friday we give the hurdler a holiday.

### *Form*

In discussing the form that has given very good results for the past twenty years, that dates back to the days of Bob Simpson of Missouri, and has continued up to the present time in "Spec" Towns, we realize that it has been modified to a certain extent; however, the same basic form has been maintained through these years with athletes who have been coached to use this particular style. We will take for granted that we have an athlete with the needed speed, taking his regular seven strides to the first hurdle and the usual three between the three foot six inch hurdles, spaced 10 yards apart. The stride from the last hurdle to the finish yarn, a distance of 15 yards, will vary, depending upon the individual.

The drive or lunge for the first hurdle is made with the leading leg swinging forward and upward, with both arms extended forward to be in line with the leg. The lead leg has a slight bend at the knee and should be swung smoothly like a pendulum.

This puts the body of the athlete into a perfect split over the hurdle, with head up and shoulders square. The height of the head should not vary while the athlete is running between or going over the hurdles. The back leg is brought through slowly in one motion, scissoring with the lead arm, which is swung sideward to the rear and down in order to get the necessary cut-down over the hurdle to allow the athlete to come down running.

Balance and cut-down are aided by the opposite or short arm, which we maneuver a certain way in order to get an excellent kick in coming down off the hurdle. It does not make any particular difference whether a high hurdler takes off with his left or right foot. Percy Beard, "Spec" Towns and other hurdlers have demonstrated that the left or right leg does not make any difference. I think it is more important that we strive to bring the athlete down running, with a good body lean forward in making the drive for the next hurdle than it is to stress the cut-down on top of the hurdle. Illustrating the difference between the long and short arm, we may say that the hurdler who takes off on his left foot carries his right leg forward as the lead leg, thus making the left arm the long arm and the right arm the short arm. The right arm is the short arm, regardless of whether we insist on its being thrown forward in line with the long or left arm or allowed to trail.

I have found with experience many things which aid in the developing of a hurdler and which are a good medium for finding out just what kind of temperament is possessed by the boy we are dealing with. For instance, we have our hurdlers take a nasty spill at least every two weeks in order to keep them from having the dread of looking forward to an unexpected fall. Although many will disagree with me, it is my opinion that football helps a hurdler as much as any activity that he may be associated with out of track season. It seems to me that hurdling and football go hand in hand and each one of these sports develops the necessary ruggedness that is needed.

I have also found that a good hurdler can run into the wind much better than he can with the wind at his back. We have had mediocre hurdlers who could beat the better hurdlers two to three yards with the wind at their back. Then by reversing the starting marks and running into the wind, the good hurdler would beat the mediocre hurdler by a much larger margin. This I attribute to the fact that the topnotcher has to run more cautiously with the wind at his back in order to avoid diving into a hurdle. On the other hand, the mediocre hurdler lacks the speed or finesse, and so the aid of the wind gives him that added speed and drive to carry him through much faster than he is capable of running.

### *Low and Quarter-Mile Hurdles*

The 220-yard low hurdle event is more of a sprint duel than a hurdle race. A fast sprinter without much knowledge of low hurdling can in most cases beat a good low hurdler who has only mediocre speed, although he has been taught the finest movements of low hurdle form. A coach can take a fast sprinter and give him a few instructions in low hurdling, and he will be able to defeat the athlete who has developed a fine low hurdling form. We find that the sprinter will pick up most of his lead in the 20 yards between hurdles. While a good hurdler will more than likely gain over the hurdle, this gain will not be sufficient to offset the speed of the sprinter between hurdles.

This would not hold good in the 120-yard high hurdles because of the added height of the hurdle and the shorter distance between hurdles. In the low hurdles, the idea is to take the hurdle in stride and not put out any great effort to clear the hurdle. In the low hurdles, the athlete is not working for the close clearance that we find him trying to obtain in the high obstacles.

A good example of this may be found in a low hurdle race between Jesse Owens of Ohio State University and Glenn Hardin of Louisiana State University. Hardin has excellent form over the low hurdles and has a fair amount of speed, while Jesse Owens is the greatest sprinter of today and has no form whatsoever over the low hurdles. Yet Owens is able to beat Hardin in this event because of superior speed.

The 440-yard hurdles, which are 3 feet high and spaced 40 yards apart, are just as much a nightmare to the coach as to

the boy who has been chosen for this event. In order to develop into a quarter-mile hurdler with any rating at all, an athlete would have to be well equipped with speed and stamina. He must learn to stride between and take the hurdles with the least amount of effort in order to save his energy while racing. Although I know very little about this event, I believe that speed work in striding over low hurdles and working with the half milers would be a necessary routine in order to develop a man for the event.

## Organization of Wrestling Coaches

A MIMEOGRAPHED bulletin is now being published by the American Wrestling Coaches Association, of which Paul V. Keen of the University of Oklahoma is President. Other officers are the Vice President, William Sheridan of Lehigh University, and the Secretary-Treasurer, W. Austin Bishop of the University of Pennsylvania. Coaches of wrestling may obtain more information about the Association by addressing Secretary Bishop in care of the Athletic Department, University of Pennsylvania, Philadelphia, Pennsylvania.

The objectives of the Association are outlined in its bulletin.

## More About Advanced Tumbling

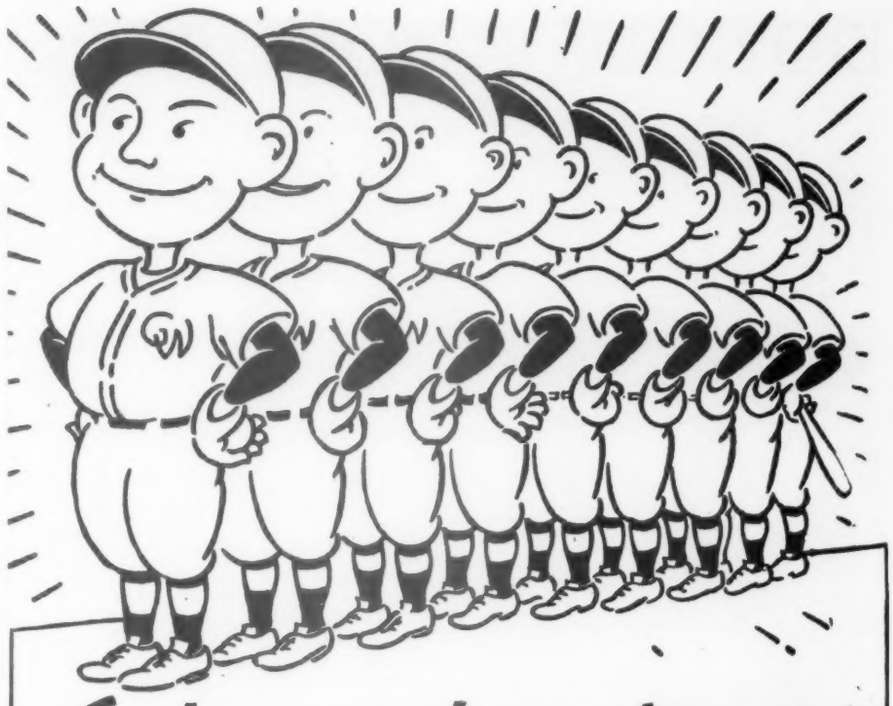
*(Continued from page 22)*

1. Make a series of dives, alternating for height and for distance.
2. Dive, jump upwards making a full turn, dive, cross legs, make a backward roll to momentary handbalance, snap-down, dive.
3. Make a series of backward rolls.
4. Make a running front handspring, headspring, snap-up, and forward roll to a stand.
5. Make a series of front handsprings.
6. Make a series of front headsprings.
7. Make series of alternating handsprings and headsprings.
8. Start with a leaping handspring, make a backward roll to momentary handbalance, snap-down, running handspring, headspring.
9. Make a front handspring and belly roll to handbalance; lower to neckspring.
10. Make a series of bucking bronchos.

### *Intermediate and Advanced Routines*

The following routines are for intermediate and advanced tumblers:

1. Round-off, series of flip-flops.
2. Round-off, series of flip-flops, tuck-back somersault.
3. Round-off, series of flip-flops, lay-out back somersault.

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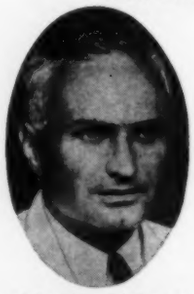

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4. Round-off, series of flip-flops, tuck-back somersault, front.
5. Round-off, series of flip-flops, tuck-back with a half twist.
6. Round-off, series of flip-flops, lay-out back somersault with a half twist.
7. Round-off, series of flip-flops, back somersault with a full twist.
8. Round-off, series of flip-flops, back somersault with a one-and-a-half twist.
9. Round-off, series of flip-flops, back somersault with a double full twist.
10. Round-off, series of flip-flops, back with a half twist.
11. Round-off series of flip-flops, back with a full twist.
12. Round-off, series of flip-flops, back somersault with one-and-one-half twist into a front somersault.
13. Round-off, series of alternates (flip-flop, back, flip-flop, back, flip-flop, back).
14-23. After a series of alternates, the finish of routines 3-12 may be used.
24. Round-off, series of whip-back somersaults.
25. Round-off, series of bounders.
26. Round-off, series of full-twisting whip-back somersaults.
27. Round-off, series of full-twisting bounding somersaults.
28. Series of front handsprings, front somersault.
29. Series of alternating front handsprings, front somersaults.
30. Series of side somersaults.
31. Series of tinsicas.
32. Series of tignas (tinsica-fronts).
33. Round-off, flip-flop, back with a one-and-one-half twist, tinsica, rudolph.
34. Round-off, flip-flop, back with a double full twist, front somersault.
35. Round-off, flip-flop, back with a one-and-one-half twist, round-off, flip-flop, back with a double full twist.
36. Forward somersault, handspring, forward somersault with a half twist.
37. Round-off, flip-flop, back somersault, back somersault with a full twist, back somersault with a one-and-one-half twist.
38. Spotting flip-flops.
39. Spotting tinsicas.
40. Spotting butterflies.
41. Series of tinsica brims.
42. Chasers.
43. Alternate chasers and butterflies.
44. Continuous back, front somersaults.
45. Barrel rolls (series).
46. Series of full-twisting butterflies.
47. In all of the above series that start with the round-off, the forward walk-over somersault may be substituted for it.
48. The brandy or baroni may be substituted in any of the series that use the round-off.


The author gratefully acknowledges his obligation to Joseph Giallombardo and William Goldstein, University of Illinois tumblers, for their assistance in the preparation of this article as well as the two other articles in this series.

## Helping the Secondary School Batter

*(Continued from page 14)*

white. The common tendency to cock the wrist will interfere with the swing and also prevent a strong follow-through. This awkward wrist position may often be caused by a heavy bat. The player should understand that, if the wrist is held straight and behind the bat, the swing will be smooth and the follow-through will be strong.

### *Learning How to Stand*

The first thing that we try to teach the boy about his stance at the plate is to take an upright, relaxed position in which good balance is maintained before and during the swing. This can be done effectively by having him take his position in the box with the bat on his shoulder, ready to concentrate on the pitch; then, without taking the bat off his shoulder, watch the pitch all the way up to the plate, following its flight right into the catcher's mitt. During early season practice indoors, while pitchers are working out, the batter, by thus standing in the box, can be taught to follow the ball with his eyes all the way to the plate.

The batter can learn to avoid close pitches by weaving away from the ball. Through this practice of weaving, the batter tends to develop confidence in himself. If he instinctively pulls away, he may be made to face the pitcher directly. With the batter in this position, it is a simple matter to develop in him confidence in his ability to avoid close pitches. As he gains confidence, we have him gradually turn back to his normal position. Of course, in this early practice, we never allow a boy who lacks confidence to stand up to a pitcher who lacks control.

We emphasize an upright stance, explaining to the player that a crouched position will cause tension and advising him that he will generally find poor batters close to the ground.

We try to determine whether a set stance or a step stance best suits the boy. Sometimes it is necessary to experiment with both, but generally the player falls quite readily into the stance that best suits his style.

In the set stance, the player's feet are apart and his body is in such a position that it is facing the plate. His knees are slightly flexed, and he inclines forward somewhat from the hips. Occasionally this stance helps a batter who tends to "shy-foot," but such a player must be watched or he may find that he is pulling away without stepping and then that he is hitting off his heels.

In the step stance, the batter stands erect, with his feet fairly close together. He takes a short step as he starts the swing, stepping directly toward the pitcher


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and planting his forward foot with the toe pointing approximately toward the pitcher.

### *Learning Where to Stand*

Each player has the problem of discovering for himself his best position in the box and variations of this. In the space of six by four feet, he must find the spot best suited to his style of hitting. This spot will be determined by his stance, the way he uses his feet, the kind of swing he uses, the speed of his reaction and his timing, the length of the bat and how it is held. We try to help the player in studying these points, and we insist that he choose his spot in the box with them in mind.

The batter must also learn to shift when necessary, changing his position according to the type of pitching and the circumstances of the game. Usually he should move back in the box against a fast pitcher and up on a slow, curve-ball pitcher. He should be in the front of the box for a bunt. He should be well back when a steal is on, forcing the catcher to move back also. When trying to draw a walk, he should either crowd the plate or stand in the rear outside corner of the box. The latter position seems to work well against a pitcher who lacks control. After studying the opposing pitcher, the coach can help the batter by advising him where and when to shift.

### *The Swing*

We tell the batter that, as he starts his swing, his first thought should be to maintain sight of the ball. Many young players tend to pull the head either upward or downward during the swing and therefore find it impossible to watch the ball all the way. The hitter must start his bat high, level off, meet the ball about fifteen inches in front of his body and follow through with his swing. He must learn to make his step short, keep his shoulders level, his hips in line and use mostly arms and wrists in making the swing. We try to watch for and correct faults in form, such as the common tendency to take too long a step or to drop the rear shoulder.

The one thing other than keeping the eyes on the ball that we emphasize most is that of hitting the ball out in front. We insist on having every boy take part in a "pepper game" with two fielders for ten minutes each day. The fielders at first stand five yards away, then move back to ten and finally to fifteen. The batter is compelled to level off and to meet the ball out in front in order to place his hits. This game does not, however, teach the batter to follow through and so, after the "pepper game," we have him take his turn in the batting cage, where he can continue to practice leveling off and hitting the ball out in front, and in addition can practice the follow-through. The pitchers for this practice try to get the ball over the plate at the right height, throwing it straight and at a reasonable speed. We tell the boy that in practicing his follow-through he needs only to emphasize arm and wrist action, and if he is holding his wrists correctly it will come naturally.

### *The Run to First*

While running to first would seem to be something apart from batting, we feel that the start and run to first are so closely connected with batting that they must be practiced along with it. After the boy's "pepper" and cage practice we make him take at least five turns at the plate with good, fast pitching, curves being used only after the first two weeks. The batter must run to first each time he hits the ball, and we take his time with a stop-watch, starting the watch when he hits the ball and stopping it as soon as his foot touches first base. Four seconds flat is good time. Every player should be able to make the distance in less than four and five-tenths seconds. We take times in all practice and regular games and post them after each game. We have the satisfaction of seeing few instances of loafing on the way to first base. A number of times runners have reached first safely when they might not have done so if they had not been given this practice.

If he is to make good time, the batter must start with the hit and dig hard. On infield hits, he must not look for the ball. He can usually tell by the actions of the first baseman how close the play is to be. He should not slide for first or stretch on his last step, but should strive to run through, maintaining a normal stride. On hits to the outfield, he should glance in the direction of the hit just before making his turn. Then he should take the turn and start toward second on every outfield hit.

### *Correcting Batting Faults*

The following faults, many of which are easily corrected, are the ones that we notice most frequently: Using the wrong type of bat, taking the wrong position in the box, taking a poor stance, not keeping the eyes on the ball, gripping the bat too tightly, waving the bat out of hitting position at the start of the pitch, not starting the bat high in making the swing, not swinging through in a plane parallel to the ground, not leveling off, not hitting the ball out in front, failing to use the arms and wrists properly, dropping the rear shoulder and swinging under, taking too long a step, stepping away, crouching, hitting off the heels, lunging, being slow in starting.

### *General Suggestions*

We make the following general suggestions to all our batters:

Spend a little time and use a little thought in picking the kind of bat and the spot in the box that are best for you.

Get a good stance and learn to swing

properly. The stance and swing in baseball are as important as the stance and swing in golf and are more difficult to apply, because the object is in motion.

Learn to follow the flight of the ball with the eyes. This takes practice and concentration.

Practice bunting before you start hitting. It will help you in learning to watch the ball.

Think of batting as the most important item in your practice, and bat at every opportunity.

Every batter has a "groove," that is, a certain place where he can hit the ball best. He also has a "groove" or place

*J. E. Gargan*

where he finds the ball hardest to hit. Go to the plate determined to hit at only the kind of ball that you hit best. Visualize the spot and refuse to strike at anything outside your groove until the pitcher gets two strikes on you.

It is better to work on your strength than on your weakness. You can improve your batting most by letting every ball in your "weak groove" go by and concentrating on hitting only balls within your "good groove."

Look for good balls instead of bad ones. Expect every pitch to be good. Then, as soon as you see that the ball is not coming where you expected it, you can prepare to let it go. This is better than to look for bad balls and be surprised to find a good one coming up.

Get the "feel" of hitting with the arms and wrists.

Every time you go to the plate, concentrate on the following:

1. Watching the ball all the way up to the plate.
2. Looking for the ball within your "good groove."
3. Leveling off.
4. Hitting the ball out in front.


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## INDEX TO ADVERTISERS


| | Page |
|---|---|
| Absorbine Jr. | 26 |
| Bike Web Mfg. Co. | Inside Front Cover |
| Butler University Coaching School | 42 |
| California Coaching School, University of | 30 |
| Catalina Island Coaching School | 1 |
| Colgate University Coaching School | 42 |
| DeGroat, H. S. | 28 |
| Denver Chemical Mfg. Co. | 43 |
| Dolge Co., The C. B. | 32 |
| Drake Relays | 24-25 |
| Dubow Mfg. Co., J. A. | 40 |
| Great Western Athletic Goods Co. | 39 |
| Hillerich & Bradsby Co., Inc. | 33 |
| Hillman-Austin | 43 |
| Hotel Sherman | 29 |
| Kangaroo Leather Association | 35 |
| Ken-Wel | Inside Back Cover |
| Minnesota Coaching School, University of | 40 |
| Northeastern University Coaching School | 41 |
| Northwestern University Coaching School | 27 |
| O'Shea Knitting Mills | 44 |
| Rawlings Mfg. Co. | 23 |
| Reach, Wright & Ditson, A. J. | 21 |
| Riddell, Inc., John T. | 37 |
| Spalding & Bros., A. G. | 3 |
| Toro Mfg. Corpn. | 31 |
| Victor Surgical Gut Mfg. Co. | 34 |
| Wilson Sporting Goods Co. | 4 |
| Witchell-Sheill Co. | Back Cover |
| Wright-DeCoster, Inc. | 30 |

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**April, 1937, Page 47**

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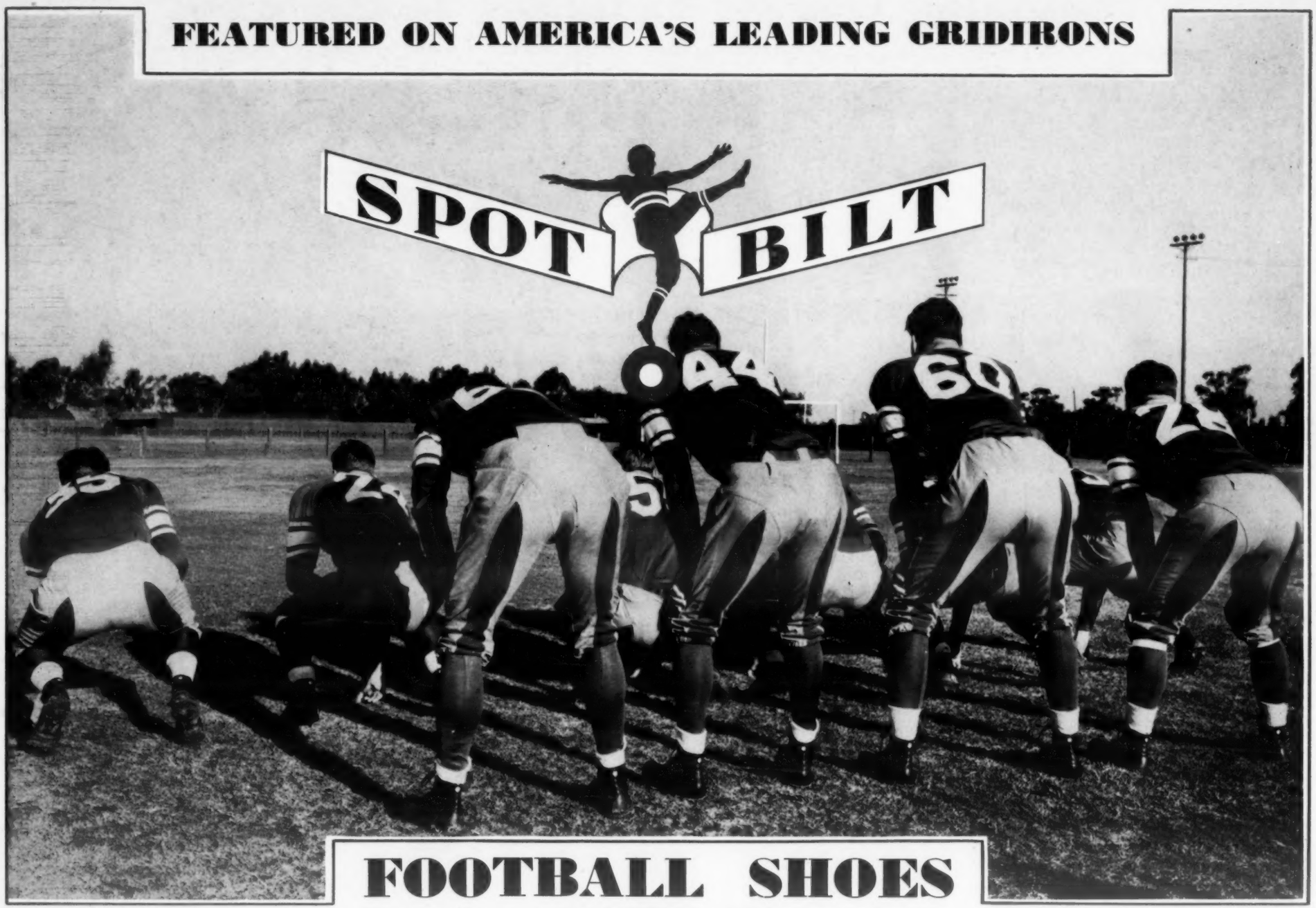


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